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CALIFORNIA AND WESTERN MEDICINE

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TRENDS IN MEDICAL AVIATION *

By Rear Admiral E. R. STITT
*Medical Corps, United States Navy
San Diego*

IN attending the meetings of the Council on Medical Education I have often been impressed by the grasp of our problems, shown by the presidents of our leading universities; it has been their duty to pass on the activities of the medical departments of their institutions. In the same way, during the past eight years, I have been actively engaged in developing naval medical aviation, not as a specialist—a flight surgeon—but as one responsible to the medical department of the Navy for the providing of adequately trained personnel, and the adoption of methods in medical aviation which would be accepted by those concerned with the more vital military problems of training combat fliers and providing efficient aviation material.

During the World War I served as a member of the medical division of the National Research Council and, in the conferences of that group, I gained the impression that, from a medical standpoint, the fitness of a man to fly was to be determined by either the psychologist or the otolaryngologist. At that time some of our ear specialists thought that the ability of a man to conquer the realm of the air rested in perfect functioning of the internal ear, and emphasized the results obtained from the turning-chair and other tests to determine normal equilibrium. The personality or temperamental studies of the candidates were considered by the psychologists as more important, and I must admit that, today, it does seem as if the information obtained from the psychological (neuropsychiatric) examination is of predominating importance.

Of course we must not lose sight of the valuable studies that were being made during the war by a group of eminent ophthalmologists in connection with the requirements of stereoscopic vision and eye muscle coördination in the selection of a pilot.

At times, during the past eight years, it has seemed to me that our flight surgeons were inclined to accept eye muscle balance as the outstanding qualification in the pilot candidate. In particular, the question of permissible defect in the way of hyperphoria has come to the fore and, in establishing a standard for waiver, we have had the constant opinion of that leader in American ophthalmology, General Wilmer. At first we would not accept a candidate with more than 0.5 diopter of hyperphoria, but on the advice of Doctor Wilmer we waive this defect when not

exceeding 0.75 diopter. In 2404 examinations at Pensacola, 54 (2.2 per cent) were thus disqualified. A difficulty seems to be that hyperphoria varies, so that an accepted candidate may later on show more than one diopter of this muscle balance defect. In a study of fatal accidents slight degrees of hyperphoria do not seem to have had any bearing.

The specialists at Pensacola have failed to note any superiority in student pilots who just pass the various eye tests with those who have little or no defect. This would tend to show that, so far, we have not erred in dangerous lowering of standards. The English flight surgeons do not stress eye muscle balance, as do the specialists in our Army and Navy.

FLIGHT SURGEON

I had always thought that the title "Flight Surgeon" was of English origin until, some time ago, I heard an amusing story by one of Doctor Wilmer's associates, who was sent over to England during the war to serve with the British forces. Upon arrival in England a survey was conducted as to those reporting practice in the specialties. This officer reported himself as a flight surgeon and great was the mystification of the authorities as to placing him. Finally it was decided that it must apply to a surgeon who could fly, and he was turned over to the aviation branch to demonstrate his piloting ability. Fortunately he had learned to fly when engaged in his medical aviation duties and passed the flying test, and was sent back with the stamp of approval as a flyer. He did not tell us whether he was then put through tests to determine his qualifications as a surgeon.

Investigating the origin of the designation "Flight Surgeon" it would appear that the first official use of the title was in a memorandum to the Chief Signal Officer, United States Army, dated April 12, 1918, in which occurs the following paragraph:

"In the case of section "Care of the Flier" we have gone over every possible designation and come to the conclusion that that is the only one that would give in a brief phrase any idea of what the activities of the section are. The personnel under this section will be charged with the question of the physical and temperamental fitness of all fliers, whether in training or later in actual service at the front. The researches of our own people who have been looking into this question, as well as the experience of our allies, have made it very evident that the flier must be carefully watched to see that he is fit whenever he makes a flight. This question cannot be left to the individual aviator, nor to his immediate superiors. It is a question of psychologic and physiologic fitness which can only be determined by specially

* Read before the California Medical Association in General Meeting at the Fifty-Eighth Annual Session, May 6 to 9, 1929.

trained men who constitute the personnel of this section. These are to be designated Flight Surgeons."

During the latter part of 1920, and the first months of 1921, I was so occupied in making arrangements for the training of our medical officers in nonmilitary specialties that I was unable to take steps to provide our service with specialists in medical aviation, but as soon as the Naval Bureau of Aeronautics was provided for by the Congress, I took up with Admiral Moffett and his assistant, Captain Murfin, the matter of training medical officers as flight surgeons. Captain Mustin was one of the outstanding pilots of the Navy and a man of exceptional executive ability. As a practical flier he felt that it was necessary for a flight surgeon to be first a pilot, in order that he might understand the physical and emotional strains experienced by a man in flying; otherwise he could not gain the confidence of combat pilots. For this training, a period of almost a year was required, and although I felt that a period of flight training of about two months would suffice, yet I thought it advisable to yield to the views of the practical aviator. I may state that later on, and just before he had to leave the Bureau of Aeronautics on account of the illness, which resulted fatally, he agreed that a period of about three months would suffice to give the medical officer the necessary experience in handling different types of planes, and to understand the stress and strain to which the man in the air is subjected.

The pioneer group of naval flight surgeons entered the class at Pensacola and followed the same course as outlined for line pilots. Such a course could not but be of help to the flight surgeon, although it is a question as to his ever using his training in navigation, radio, or motor mechanics.

In a splendid spirit of coöperation General Ireland, the Surgeon-General of the Army, invited us to send our men to join the classes of Army medical officers, undergoing instruction at the school of medical aviation at Mineola.

Following this course we required the prospective flight surgeon to serve the probationary period of three months with an active air unit and, if the commanding officer reported the medical officer as having gained the confidence of his pilot associates and secured recognition of the value of his services, then flight surgeon orders would be issued by the Bureau of Navigation. At the present time, when the importance of medical aviation is so well recognized by the line officer, it is hard to appreciate the difficulties met with by the Medical Corps to secure recognition of flight surgeons. It was necessary to overcome the view that any medical officer could care for the pilot and conduct the physical examinations of candidates. We selected our brightest young men for aviation duty, and always with an eye to tact, because it is essential that a flight surgeon be held in the same regard by his pilot associates, as was the old family physician by his patients.

Following the careers of our first specialists in aviation medicine, I have observed that the most

successful ones have been those who had something of the spirit of the old country doctor—always ready to help anyone, at any hour, day or night.

In the *Air Service Medical*, issued by the War Department in 1919, it was thought that, in addition to the flight surgeon, there was needed for the care of the pilot a physical director, whose duties would be similar to those of a gymnasium director; and a nutrition officer to care for the diet of the fliers. You will remember the importance attaching to physical training during the war, and this influence suggested the physical director. As regards the nutritional adviser, I rather suspect a French source, as even today the French flight surgeons attach great importance to efficient alimentary tract functioning in the fitness of the flier.

We recognize the importance of the care of the diet and athletic training, but think the flight surgeon should himself supervise these important aids to flying efficiency, thus combining three specialties in one. In our development of specialists for the medical service of the Navy we have devoted much thought to the problem of combination of specialties on account of our many hospitals and our limited personnel. From the first, we have been combining ophthalmology and otolaryngology; and we have considered the flight surgeons, on account of the special attention they have to give to eye and ear conditions, as giving us a reservoir for such specialists. Today some of our best eye and ear specialists were former flight surgeons.

TESTS TO DETERMINE PHYSICAL EFFICIENCY

In our Army and Navy great value is attached to the Schneider index, as indicating cardiovascular efficiency. This is an index which has a maximum figure of eighteen, and is made up of six factors: (1) Pulse rate reclining. (2) Pulse rate standing. (3) The difference between these rates. (4) Effect of exercise on these rates. (5) Time of return to standing rate, following exercise; and (6) Difference between reclining and standing systolic blood pressure. The fact that this test apparently gives an exact numerical result appeals to our line officers, and many of our leading flight commanders express the utmost confidence in this test, and have directed that the flight surgeons of their commands make such a test of a flier when there has been a question as to his physical condition. This fact, as well as the great experience obtained by American flight surgeons with this test, makes it one of great importance. It does take a great deal of time, however, to complete the test, and we are all familiar with the inadequacies of the numerous cardiac functioning tests, which have been advanced, and praised, and discarded during the past thirty years.

In the British air service they attach great importance to a test in which the candidate, without rebreathing, maintains a column of mercury at 40 millimeters by blowing through a rubber tube. The time this test can be sustained and the effect on the pulse rate, during a succession of

five-second intervals, gives valuable information as to the cardiorespiratory efficiency.

We used this test in our annual physical examinations of about five hundred naval officers on duty in Washington, but found it necessary to reduce the requirement to 20 millimeters for older officers, as many of them began to show rather marked cyanosis before they would give up. The 40 millimeter standard is one for young men between eighteen and thirty years of age.

Another test, much used by the British, is somewhat similar to that noted above—the length of time the candidate can hold his breath. Not only does this give evidence of cardiorespiratory fitness, but it shows grit—the fellow who holds on until he is, figuratively, black in the face, is the man who does not give up easily.

Our naval flight surgeons are now considering the addition of some type of breath-holding test to the other Schneider factors. The great advantage of the Schneider index is its standardization.

The British authorities attach great importance to a good sports record. According to Flack, a man who has been a good football player at his public school must have a good physique and courage, but, less apparent, is the requirement of character. The other boys will refuse to admit to their games one who is not square and a good sportsman. In the experience of the instructors at Pensacola there does not seem to have been a relation between aptitude for flying and an outstanding athletic record at the Naval Academy. One of the line instructors told me, however, that a good golf player had an advantage.

In the first part of this paper reference was made to the stressing of the Barany tests during the World War, but it is now recognized that vision and muscle sense must be considered in equilibrium as well as the internal ear. Blindfolded pilots, or those flying in the dark, do not seem to be able to recognize change of position, so that the present opinion is that vision is more important in equilibrium than the functioning of the semicircular canals, or muscle sense.

Although we use the Barany chair to determine equilibrium, through nystagmus and falling tests, the British do not consider such tests necessary. There are so many disagreeable reactions following the caloric douche test that the flight surgeons hesitate to use it. During his inspection of medical aviation activities in European countries, Commander Davis, Medical Corps United States Navy, the head of the Division of Medical Aviation in the Bureau of Medicine and Surgery, was interested in a "retarded balance" test, used by the French flight surgeons. The test was performed with the candidate standing, eyes closed, and hands behind his back. Three complete turns were made on the vertical axis, the candidate then assuming a sensitized Romberg position (right foot in front of left if turns made to the right, and left foot in front of right with left turns). A normal individual regains equilibrium in ten to fifteen seconds, and if the candidate does not regain his balance in thirty seconds it is cause for rejection.

This test is so simple and brief that it appealed to me. In my talks with our flight surgeons I have always advised them to simplify and shorten the period of examination whenever possible. The British have a balancing rod test, which we have been experimenting with. There is a thin board, about 4 by 12 inches, which has a slender rod, with a rather unstable base, placed near one end. The candidate has to pick up this board from a table, extend the arm, and then replace the board on the table without upsetting the rod. There is an old idea that a drink of whisky "steadies the nerves," but I understand that the experience of the British flight surgeons is that the pilot who has taken a drink or two upsets the little rod and is thereby grounded.

During the war an apparatus known as the Ruggles orientator was devised, and it was thought that this would, in a practical way, test the candidate as to his equilibrium and other qualifications important to the pilot. The orientator reproduced the movements of the plane in the air in a similar but more sudden and upsetting way. The orientator was a sort of a cockpit of a plane swung within three concentric rings provided with controls within the cage, and a set of controls outside for use of the examining instructor. The candidate, strapped in the machine, can be turned upside down, or in any other position, through the operation of motors controlled by the examiner. When the candidate uses opposite controls, he returns to normal (neutral) position. The main objection to the orientator was that it seemed impossible to provide it with a recording apparatus. About a year ago, however, this was accomplished by the physicists at the Naval Experimental Laboratory, and tests with this graph attachment have been conducted at Pensacola. Lieutenant Commander Poppen, Medical Corps United States Navy, the head of our medical aviation department at the Naval Medical School, has been analyzing these graphs, but his study of these first experiments is not promising. The factors which seemed worthy of consideration were: (1) Reaction time to single control. (2) The consistency of this time. (3) Coöordination. (4) Performance time for single control; and (5) Ability to perform multiple tasks. There was little difference between successful and unsuccessful candidates. The best criterion would admit only 8 per cent of students who failed to solo, and 19 per cent of those who failed after having soloed, but would admit only 21 per cent of those qualifying and only 33 per cent of experienced pilots. Further study may prove certain elements of the test to be worth while. Originally it was supposed that by having a candidate start with the orientator the time of training could be shortened, but there does not seem to be foundation for this view. The European flight surgeons attach much importance to tests for reaction time, while in America these tests have not occupied an important place.

TEST TO DETERMINE REACTION TIME

It is very evident that one who cannot think and act without undue retardation is unfit to meet

the sudden emergencies which occur in aviation, and my interest in the recording attachments of the Ruggles orientator was aroused because I thought that this graph provision would give us an apparatus superior to the Reid control indicator which marks reaction time.

In the organization of the Bureau of Medicine and Surgery, medical aviation is one of the activities belonging to the planning division, and the head of this division, Captain Carpenter, Medical Corps, United States Navy, tried for two years to get one of these English machines, without success; and this failure made him particularly desirous of developing a rival in the orientator. In the Reid control the candidate is seated in a cockpit similar to that of an airplane, and operates the controls, which, when in neutral, stop the current to the graph attachment, and, when not in neutral, allow the current to pass. The time required to bring the controls in neutral is recorded, as is also overcontrolling. There are also added auditory disturbances, such as blowing a Klaxon horn behind the candidate. The British have great faith in this apparatus in the selection of pilot candidates.

The French have been very enthusiastic about reaction time tests, not only response to auditory, visual and tactile stimuli, but even recording reaction time to changes of position.

In his visit to Europe, our consulting flight surgeon, Doctor Davis, was impressed with the thoroughness of the Italian flight surgeons in conducting reaction time tests, as well as with those determining equilibrium, and it would seem advisable, unless we have a good method in the recording orientator, to investigate, actively, the problem of measuring reaction time.

About a year or so ago we began experimenting with a simple reaction time and coöordination determining test, which we got from Doctor Rippon of the Royal Air Force—the dominoes test. After shuffling up the pieces, the candidate is required to match them, end to end in a long line, but placing the doubles at right angles to the continuing line. A stop watch is used to time the completion of the matching, and failure to match all pieces is checked as well as the time consumed. Our flight surgeons at Pensacola now consider that more important, even than reaction time and coöordination ability, is the information to be obtained from the test as to temperamental qualities. The neurotic individual shows a rather characteristic jerky and self-conscious reaction, and Doctor Sutton, our neuropsychiatrist at Pensacola, is of the opinion that, with this test, one can obtain help in the recognition of the introvert, extrovert, and neurotic individual.

TESTS TO DETERMINE PSYCHOLOGICAL SUITABILITY

If this test can help us in placing a candidate psychologically, it is a worthwhile one, because this part of the examination is the one which, in our experience, has proven the most difficult. In grading candidates and accepted pilots, from the neuropsychiatric standpoint, there was the great-

est objection to the use of the designations temperamental and psychological aptitude when an unfavorable opinion was recorded. The naval officers who took the examination felt that any such record would militate against their future service, so that now we make use of the designation aeronautical adaptability, which affects solely a man's fitness as a pilot. We do not resent being told we cannot sing or paint a picture, and the same is true of being told that we cannot fly.

Realizing that we had to bring the pilots to a recognition of the value of aviation medicine, I found that the questioning connected with psychoanalysis aroused antagonism on the part of many officers of the highest type, and I have had many conferences with our flight surgeons about the pros and cons of sexual trends.

The senior flight surgeon at our school of medical aviation, Doctor Poppen, now holds that the flight surgeon should place less confidence in the value of analytical Freudian concepts, and give more consideration to the integral psychology of McDougall, as being more applicable to normal personality. Poppen finds application for Adler's inferiority complex and its accompanying defense mechanism, and still uses Jung's word association test, considering, however, only the average time of response as of practical significance.

Last summer I decided to send Doctor Sutton, one of our ablest and most experienced psychiatrists, to Pensacola to work with the regular flight surgeons in the study of the problem of temperament. Already his help has been recognized by his associates, and his recommendations as to the methods of determining psychological reactions give great promise. One part of his examination is that designated "self-estimate." In this the candidate is questioned as to his self-reliance, sense of humor, irritability, vanity, courage, egotism, and many other characteristics. Lengthened reaction time in replying to these questions is noted by the examiner, and this part of the examination seems to give a more accurate estimate than any other part of the psychological questionnaire.

There are two very important questions to ask the candidate for aviation training, and these are: (1) Whether he would like to fly for the pleasure or sense of accomplishment it would give him (air-minded), rather than from the standpoint of the advantage of increase of pay; and (2) whether there is a marked objection to his flying on the part of his family. A weeping or nagging wife at breakfast may explain a retardation of reaction time when an emergency arises and a crash results a few hours later. From a research standpoint it would be instructive to have a large number of people examined and allow all to start training regardless of physical defects; but I am afraid such an experiment would not meet approval. In England there is an opportunity to study the relation of crashes to physical or psychological defects in the pilots, provision being made to have the pilot (provided he is not killed) sent to the central laboratory of medical aviation for a thorough examination by experts, but

Doctor Davis did not obtain their statistics as to this relation.

The medical aviation service of the Navy did not begin to function until the latter part of 1922, so that those officers who had taken up flying in the four years preceding were not examined physically, other than from the standpoint of an ordinary physical examination. A few months ago I asked Flight Surgeons Poppen and Davies to go over the records of 604 aviators, who were still flying in 1923, but who had been trained prior to the giving of the special type of medical examination. Of these qualified pilots 95.3 per cent showed no defects when examined in 1923 by flight surgeons, 2.8 per cent had recorded minor defects which were waived by the Bureau of Medicine and Surgery, but on the advice of the consulting flight surgeon. (Defects were never waived against the judgment of the consulting flight surgeon.) From the above it will be seen that only 1.9 per cent of these 604 pilots had defects which would disqualify, and it is reasonable to assume that some of these might have developed defects in the years subsequent to their becoming pilots. Unfortunately it was impossible to get information as to the physical qualifications of those who failed to become pilots, or who were subsequently killed in crashes, but the statistics above do show that the man who qualifies in military aviation seems to be the type of man who can pass the flight surgeon examination. With this in view I think we should hesitate to lower the physical standards required for the combat pilot, but it is possible that Major Bauer, and his associates in the Department of Commerce, may find it safe to lower the standards for ordinary commercial flying, although I gather from the statements of expert pilots that the training a combat pilot must receive makes for a safer commercial pilot.

TRAINING OF FLIGHT SURGEONS

With the removal of the Army School of Medical Aviation to Texas, it was found necessary to make other provision for training our flight surgeons. In training specialists for the naval medical service, our policy has been to utilize civilian facilities whenever possible; and with this in mind we approached Dean Meeker of the Postgraduate School of the University of Pennsylvania. A conference was held between Flight Surgeon Davis and myself, representing the Navy, and a number of professors, as well as Dean Meeker, representing the University. In view of the possibilities of commercial aviation these gentlemen recognized the probable need of instituting a course in medical aviation, but the many specialties involved in such a roster and the difficulties of evaluating their respective importance, made them feel that the time was not yet ripe. After outlining our views as to the training of a flight surgeon, the different professors attending the conference were asked to express their opinions. I was much interested in the impressions gained by Professor Weisenberg, who stated that it seemed to him that the important

feature of such a course would be to eliminate members of the class who were temperamentally unfitted to be flight surgeons; the instructors would have to study the student rather than the student study the subject.

Following this conference, we decided to institute a course for flight surgeons at the Naval Medical School, Washington, D. C. Twice a year we have a class of from fifteen to twenty medical officers take a four or five months' refresher course at the school, and during the first two months the entire class is given intensive training in medical aviation physiology, ophthalmology, cardiology, otolaryngology, psychology, and neuropsychiatry. This qualifies any officer who successfully completes the course to conduct the routine examinations for pilots; but for the specialists in medical aviation this is only the starting point. From the class we select three or four officers who show aptitude for this specialty, and for the next two months we have a seminar course, in which the selected group concern themselves with special problems; and in this research training we are fortunate in having the assistance of the Bureau of Standards, St. Elizabeth's Hospital, and the Naval Experimental Station, Bellevue, as well as the opportunity to discuss these problems with the officers of the Bureau of Aeronautics.

Following this seminar course the prospective flight surgeon goes to Pensacola, where he has practical training with groups of aviation personnel for two months; and if he "makes good" he becomes a flight surgeon. The course of probationary training is a six months' one, but it is only after years of experience that one really becomes a flight surgeon. About a year ago we worked out methods for a brief training of medical reserve officers to familiarize them with aviation duties. The course was limited to two weeks, and was only open to ophthalmologists, or others who had had considerable training in eye work; it being recognized that only men who were familiar with eye muscle balance and other eye examinations were prepared to profit by such a short course.

The necessary books and a suggested course of reading were sent the prospective flight surgeon in advance, so that when he arrived at Great Lakes, Hampton Roads, Pensacola, or San Diego, he was acquainted with the necessary groundwork of aviation physiology, psychology, neuropsychiatry, and cardiology.

There is a great field for the flight surgeon in connection with the problems of health extension. (The studies of the actuaries rather throw doubt on the extension of life beyond the Biblical period.) The naval flight surgeon lives with the pilots of his unit, almost on terms of family intimacy. He knows what the pilot eats, and whether he drinks too much coffee or tea; whether the amount of sleep is sufficient, and is familiar with the pilot's exercise habits. In life extension (or "positive" health recommendations) we stress diet, exercise, and mental hygiene, but, frankly, we have very little positive knowledge. The in-

dividual constitution varies so greatly that what is good for one may be bad for another.

Almost the only constant health rule that we find in the lives of octogenarians and centenarians is moderation. The flight surgeon is in a position to evaluate health measures and, eventually, to make reliable recommendations.

The outstanding need in medical aviation is international joint action in research, and evaluation of the various tests in use by the different countries. Many of our flight surgeons have regretted the difficulties attending coöperation between the flight surgeons of our Army and Navy; there should be some provision for exchange of flight surgeons so that constructive criticism would be provided.

In our section of the Joint Munitions Board, General Ireland and myself were in perfect agreement that the utmost coöperation must obtain in the medical departments of the two services.

In my opinion, the visit of the consulting flight surgeon of our bureau to the medical aviation centers of Europe has been of inestimable value to naval medical aviation. More progress could probably be made in a few months than in a few years if, instead of working alone, there should be the most intimate association between the flight surgeons of our Army, Navy, and Department of Commerce, and these with a similar activity of other countries of the world.

United States Naval Base, San Diego.

THE ENLARGED SPLEEN*

By WILLIAM J. MAYO, M. D.
Rochester, Minnesota

THE problem of the enlarged spleen frequently presents itself to the physician. In the majority of cases the signs and symptoms are confused and the clinical phenomena are not always closely related to the spleen. Physiologically the spleen is not important, but pathologically it is a menace to the patient, because splenic enlargement of itself increases a function which is not significant, to an overactivity which is not easily controlled through natural agencies.

The lymphoid tissues of the body, of which the spleen is a part, have been named by Aschoff and Landau the reticulo-endothelial system; they comprise a number of tissues with diverse functions not always related to each other. The cells of the sinuses of the spleen are closely related to the Kupffer cells of the capillaries and sinuses of the liver. These structures have in common the ability to develop lymphocytes, which form about 25 per cent of the total white blood cells, and, to a less and varying extent, the mononuclear leukocytes. The lymphocytes are produced in large numbers by the Malpighian tufts and it is probable that the production of lymphocytes is the chief function of these nodes. The lymphocyte, as pointed out by Carrel, has all the properties of growth and nutrition, which he demonstrated in the nurture under glass of fibroblastic tissue. The

phagocytic action of the large mononuclear leukocytes is well marked, and these cells, with the aid of the reticulo-endothelial cells generally, remove from the blood stream and tissues subnormal red blood cells as well as microorganisms and foreign bodies—functions of the spleen which are maintained in the shadowy capillary area between the splenic arteries and veins.

The lymphoid tissues, again, are of interest because they become senescent to a greater or less extent. C. H. Mayo pointed out more than thirty years ago that the lymphatics, after the adolescent period, gradually become less active through the development of fibrous tissues, and that the reason cancer spreads less rapidly in the old than in the young is that the lymphatics of older persons are not sufficiently active to disseminate the disease quickly.

The appendix has a relatively large amount of lymphoid tissue, and undergoes normally the same type of senescence. The gradual disappearance of its lymphoid structure, with the accompanying contraction and obliteration of its lumen, has been wrongly named "appendicitis obliterans." Failure to relieve supposedly related symptoms by appendectomy has given rise to much argument with regard to the validity of chronic appendicitis.

It often happens that tonsils which are very large in youth, by middle age will have shrunk so as to be scarcely noticeable under the pillars of the fauces. The tonsils are lymphoid in structure, and perhaps one of their functions is to permit, early in disease, a few bacteria to enter the blood to stimulate resistance.

The spleen reaches the height of its activity in the adolescent period, and it is during this period that disease of the spleen is most frequently manifest. By the age of forty, the functional capacity of the spleen has become greatly reduced, because of the introduction of fibrous tissue.

The pulp cells of the spleen are efficient phagocytes, and the phagocytic activity of the spleen as well as its strainer function in the removal of bacterial and protozoal and toxic material is aided greatly by the normal disappearance in the spleen of the outer and middle coats of the blood vessels, so that the blood comes in direct contact with the endothelial lining of the splenic capillaries and sinuses. In the dog, the spleen may contain about 20 per cent of the total blood volume, and in times of stress the blood may be forced into the circulation by the nonstriated muscle fibers of the spleen. Undoubtedly this is equally true of man, and perhaps accounts for the left-sided pain in the marathon runner. According to tradition, the ancient Greeks removed the spleen from their runners in preparation for the race.

The control of the action of the spleen apparently depends to a large extent on unidentified internal secretion, since the nerve supply to the capsule from the sympathetic system is scanty.

Our knowledge of the functions of the spleen has been deduced to a considerable extent from the clinical pathology. It has been shown that regardless of the nature of the enlargement of

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the spleen, the destructive effect on the blood becomes manifest in the form of chronic anemia.

The red blood cells are produced in the myeloblasts of the bone marrow. Mann and Magath have shown that destruction of the red cells, as far as the bile pigments are concerned, takes place largely in the bone marrow, and only to a small extent in the lymphoid tissues, and that the function of the liver is rather to filter out bile pigments than actively to destroy great numbers of red cells.

Ashby has shown that normal red blood cells may live seven weeks and probably longer. When the spleen is enlarged, its destructive function is enhanced, and it destroys red blood cells which, although they may not be normal, are still capable of functioning.

The red blood cells are the oxygen carriers, and contain one or more atoms of iron to each molecule of hemoglobin. When these cells are reduced, chronic anemia or suboxidation is a result. That the spleen may destroy a certain number of white blood cells as well as red blood cells is shown in the leukopenia of splenic anemia. In hemolytic icterus there is a specific destructive effect of the enlarged spleen on the red blood cells, which in this disease are abnormally fragile, and in hemorrhagic purpura there is specific destruction of the blood platelets, which have to do with the clotting of the blood.

One of the theories of the clotting of blood is that the blood contains a ferment called prothrombin, which tends to clot, and a second ferment, antithrombin, which prevents clotting. When there is injury to the tissues, the thromboplastin, formed from blood platelets, unites with the antithrombin, and permits the prothrombin with the calcium to form a clot. If thromboplastin is absent from the blood and tissues, due probably to increased resistance of platelets, hemophilia results; if the blood platelets are reduced, purpura results, and if the calcium is exhausted, as it sometimes is in long continued jaundice, the hemorrhagic conditions develop which sometimes accompany chronic jaundice.

The removal of the spleen in experimental animals and in cases frequently seen in man in which a normal spleen has sustained traumatic rupture, has shown that beyond the temporary effect of the operation the physical economy has not been impaired.

Grouping the disease conditions which have produced enlargement of the spleen makes apparent certain interesting data.

The four main dysfunctions of the enlarged spleen concern, first, the liver and bone marrow; second, the blood; third, the action of the spleen as a filter, and fourth, its relation to malignant disease of the spleen and other lymphoid tissues.

The liver bears a close relation to the spleen. The spleen has a large blood supply, but its veins join with the portal vein and supply about 20 per cent of the blood in the portal circulation. All the material, protozoa, bacteria, toxic substances, and the various elements that have been col-

lected by the spleen in its capacity of a strainer eventually are carried to the liver.

The fact that the spleen is a strainer accounts for its enlargement in typhoid, tuberculosis, malaria and syphilis. In these diseases the spleen may become incapable of destroying material that it deletes from the blood. Therefore, when the material is sent on to the liver, it has not been efficiently prepared by the spleen. The material is toxic, and, although the liver is the great detoxicating organ of the body, sometimes, in late stages of the diseases mentioned, it is injured and the fibrosis (cirrhosis), which Banti described, is produced. The hepatic cells are all alike in function and therefore the morphology in a pathologic state is simple as compared with that of organs with several types of cells.

In neoplastic conditions the spleen may take part in the production of white cells of embryonic character, such as are seen in splenomyelogenous leukemia and in other diseases, for instance, Hodgkin's disease, according to some pathologists, and various types of lymphoma. It is of interest in this connection that these embryonic white cells that are produced so rapidly are destroyed readily by various agents, particularly x-ray and radium, to which all the lymphoid tissues have great sensitivity, although the disease may not be cured by this destruction. As Desjardins has pointed out, the sensitivity of the normal cells of a tissue to radium and x-ray is the index of the benefit that may be expected from the use of these agents in the cure or palliation of malignant disease of that tissue.

This short résumé of the clinical relationship of the enlarged spleen to general conditions enables broad evaluation of the results of splenectomy. I have classified 534 cases of splenectomy on the clinical rather than on the pathologic basis. I am indebted to my colleagues for important data. Dr. Giffin has worked out the clinical course of these cases as related to the condition of the blood and the diagnosis, with which he has dealt in various papers, and Dr. MacCarty has observed the pathologic condition of the spleens removed. An attempt has been made to correlate these data, but the pathologic condition is not always closely related to the clinical condition; this may well be expected, since the spleen is only one of a number of organs or tissues that are concerned.

DATA CONCERNING 534 CASES IN WHICH SPLENECTOMY WAS PERFORMED BETWEEN APRIL 1, 1904, AND APRIL 1, 1929 (TWENTY-FIVE YEARS)

Clinical Classifications	Cases	Hospital Mortality
Disease associated with abnormality of the red blood cells.....	207	11
Disease associated with abnormality of the white blood cells.....	55	3
Disease due to filtration of infectious and toxic agents.....	237	30
Splenic neoplasms.....	11	3
Miscellaneous	24	4
Total	534	51

Some of the patients who died following splenectomy recovered satisfactorily from the operation, but were not greatly benefited by it and remained

in the hospital until death occurred. For this reason the hospital mortality is given rather than the operative, which would be much less.

DISEASE ASSOCIATED WITH ABNORMALITY OF THE RED BLOOD CELLS

I shall take up the splenic syndromes associated with abnormality of the red blood cells in the order in which the results of splenectomy were the best. Of these, hemolytic icterus is first.

Hemolytic icterus.—This disease is characterized by enlargement of the spleen and the liver, by chronic jaundice, and by fragility of the red blood cells, which is rather in keeping with the idea that the spleen is an agent of destruction rather than the cause, as this fragility of the red blood cells continues after the spleen has been removed. In the uncomplicated case the ordinary signs of obstructive jaundice are not present; that is, the stool is of normal color, and bile is not present in the urine, but 68 per cent of these patients have gall stones, because of the enormous amount of bile pigment which has come from the destroyed red blood cells. These gall stones may result in irritations and infections and give rise to obstructive jaundice with the other symptoms of gall stones.

Hemolytic icterus exists in two forms, the first of which is the infantile or congenital type of Minkowski, which may be present from birth. Various members of the same family may be more or less affected by this dyscrasia. The second is the acquired type of Hayem and Widal, which is usually seen in the adolescent period. In this type the symptoms are more acute and lead to progressive anemia and death from intercurrent disease, usually by middle life or before.

The familial type of hemolytic icterus may vary from conditions in which the destructive effect is so marked as to necessitate early splenectomy, to those in which the symptoms are so slight that the disease may exist for years without causing serious injury.

The acquired type of hemolytic icterus is a more serious condition and usually requires splenectomy.

Hemolytic icterus is marked clinically by intermittent fever, or malaise, in which there is an increase of jaundice, and of tenderness about the spleen and the liver. Patients should not be operated on during acute manifestations, as the symptoms are due to acute toxemia which may result in death following operation. The mortality of splenectomy in the uncomplicated cases is low; in our series of 100 cases there were four deaths. Within four days after the operation the patient, perhaps for the first time in his life, is free of jaundice.

Hemorrhagic purpura.—In chronic hemorrhagic purpura also, splenectomy gives remarkable results. In this disease acute manifestations may sometimes develop, and the acute type should be carefully distinguished from the acute purpura of the late stages of aplastic anemia, leukemia, and dyscrasias of that type in which splenectomy does no good and gives a high immediate mortality.

In the typical case of hemorrhagic purpura the blood platelets, which ordinarily range from 250,000 to 400,000, are reduced to less than 100,000; at 80,000 mild purpura may appear, and at less than 30,000 purpura will be marked. When the blood platelets are reduced to 30,000 or less, as may happen in some acute types, the patients must be rehabilitated by transfusions and other measures before splenectomy is attempted.

In the chronic cases of hemorrhagic purpura, the purpura may be more or less intermittent. In the female, serious hemorrhages from the uterus at the menstrual time may be marked and prolonged. The spleen usually is readily palpable, but sometimes it is not large enough to be palpated.

Removal of the spleen in chronic hemorrhagic purpura acts like magic. The external wound which in the course of opening the abdomen may have required a large number of forceps on blood vessels, will often stop bleeding within a few minutes after the splenic pedicle has been tied. The spleen as a rule is not adherent and is readily removed. The mortality in our series of thirty-two cases was one.

Pernicious anemia.—In pernicious anemia the debilitated red blood cells, the best the patient can produce, may be removed by the lymphoid tissues, especially by the spleen. In the occasional case, splenectomy may be indicated, although feeding liver has greatly reduced the percentage of cases in which splenectomy would be advisable.

The removal of the spleen is at once followed by palliation much more marked and prolonged than that following blood transfusions, and the patients lived two and a half times as long as comparable patients in whom the spleen was not removed. A few of these patients are still alive, following splenectomy, after a number of years, but are not cured.

In sixty-two cases of splenectomy for pernicious anemia, there were four deaths.

Polycythemia vera.—I will speak of only one other condition and that is polycythemia vera. This disease has been so contradictory in the results of splenectomy as compared with its pathologic expectation, as to amount to a paradox.

In polycythemia vera the spleen is enlarged, the liver is enlarged, the hemoglobin varies from 100 per cent to 130 per cent, and the red blood cells may run as high as 10,000,000 or 12,000,000 in each cubic millimeter. The spleen was removed in three of these rare cases in the clinic, in one with remarkable improvement lasting now nearly eight years. The liver of this patient is still large and hard, the hemoglobin runs about 100 per cent, and the red blood cells about 6,000,000, but the patient is, to all intents and purposes, well. The second and third cases are too recent for evaluation.

DISEASE ASSOCIATED WITH ABNORMALITY OF THE WHITE BLOOD CELLS

In animals below the amphioxus only white blood exists, and copper generally takes the place of iron in the circulating fluid. In the lowest vertebrates only traces of hemoglobin are to be

found. In the human fetus, at the earliest stage, only white blood exists. In the various types of leukemia there seems to be a pathologic reversion to the primitive condition.

Splenomyelogenous leukemia.—In splenomyelogenous leukemia there is an enormous increase of white blood cells, even to 500,000, or above, but these cells are without function, and have the malignant characteristics of large nuclei and enlarged nucleoli. The work of Wilson, MacCarty and Broders has shown that the large nucleus of the embryonic cell acts as the oxidizing agent, in obtaining nourishment for the rapidly dividing, as yet nonfunctioning cell, and that the large nucleolus establishes in the cell malignant characteristics.

In splenomyelogenous leukemia, the spleen, like all the lymphoid structures, is extremely susceptible to radium and x-ray, and this sensitivity renders these agents of first importance in palliation. There comes a time, however, when probably by reason of radiologic encapsulation of the spleen, they lose their effect. It has long been known that anything which will reduce the size of the spleen will reduce the percentage of the white blood cells, and that the red blood cells become greatly increased in number, with relief of the anemia. This fact has led us in forty-six cases to remove the spleen, which we found could be done quite readily after first reducing its size with x-ray and radium. Do not reduce below 30,000 for fear of toxic results.

These patients were all relieved temporarily, and a few are alive, although not cured, five, six, or more years after splenectomy.

In addition to these cases in which the disease was well marked, and there could be no doubt as to the diagnosis, the spleen has been removed in some atypical cases which, as cure resulted, have been classified in a subdivision of splenic anemia. In cases of younger persons, otherwise in good condition, and in the earlier stages of the disease, as well as in atypical cases, splenectomy may be considered in splenomyelogenous leukemia.

In the forty-six cases of splenomyelogenous leukemia in which splenectomy was performed, there were three deaths in the hospital.

FILTRATION OF INFECTIOUS AND TOXIC AGENTS

The strainer function of the spleen is well exemplified in the enlargements present in splenic anemia, tuberculosis, syphilis, typhoid fever and malaria.

Splenic anemia.—Splenic anemia is the most common type of splenomegaly in which splenectomy is performed. The spleen is large, the patient suffers from anemia, often intermittent, and when the disease is well developed, there often are hemorrhages from the stomach, pallor, weakness, great reduction of the hemoglobin and the red blood cells, and in the majority of cases a reduction of the white blood cells, often to 3500. Sometimes the white cells are increased rather than diminished, usually to not more than 10,000 or 12,000. In the late stages, described first by Banti in children, there may be cirrhosis of the

liver, attended by ascites and other symptoms of hepatic insufficiency.

The cause of splenic anemia is not understood. The spleen shows an enormous amount of fibrosis, with atrophy of the pulp cells, and thrombo-phlebitis, perhaps the result of bacteria which have been strained out of the blood and destroyed, or toxic material which has failed to be detoxicated. The condition of the spleen resembles that to be found in certain chronic types of septic or syphilitic splenomegaly. Because the spleen in this condition usually is adherent and often extremely adherent, splenectomy may be difficult and attended with considerable risk. In the earlier cases with the patients in good condition, the risk is slight, but as patients even in the late stages, with cirrhosis of the liver, ascites, and marked hemorrhages, will often get well and remain well after the spleen is removed, the conscientious surgeon will remove the spleen in terminal conditions in which the risk is high.

It would appear that cirrhosis of the liver results from toxic material gathered in the spleen and sent to the liver, which the liver, failing to detoxicate, attempts to encapsulate diffusely, with the introduction of general fibrosis. The liver has the greatest power of regeneration of any organ in the human body. In the dog, by removing not more than a third of the liver at a time, the entire liver can be removed and will be replaced within the year.

In about 10 per cent of the cases in which recovery has taken place after splenectomy, the patients have died some time in the next ten years of hemorrhage from the stomach, probably from ruptured varices in the lower end of the esophagus. In our series of 148 cases, there were fourteen deaths following splenectomy.

Tuberculosis.—In nine cases of tuberculosis of the spleen the spleen was removed, with cure in five. One patient died from acute miliary tuberculosis, possibly due to rupture of tuberculous abscesses in the parenchyma, resulting in a vascular infection at the time of the operation. One could not be traced, and two patients have developed other manifestations of chronic tuberculosis.

Syphilis.—In ten cases of intractable syphilis with enlargement of the spleen, splenectomy was performed, with one death. In these cases the symptoms of chronic anemia were almost immediately relieved, and the Wassermann reaction on the blood became negative for the first time.

Typhoid fever has almost disappeared, and malaria is now under such good control by modern treatment as to give little occasion, in this country at least, for splenectomy for the relief of chronic splenomegaly of such origin.

SPLENIC NEOPLASMS

Benign tumors of the spleen are usually secondary in character, due to hemorrhage or injury. Benign lymphomas are also seen. In cases of this type splenectomy gives good results.

Primary malignant neoplasms are usually of the so-called lymphosarcoma type and vary greatly in malignancy, and not rarely may be

cured by splenectomy. In one case a very large lymphosarcoma of the spleen was removed. The patient, a young married woman, lived eight years and became the mother of three children. She died from metastasis.

In that curious disease described by Gaucher, in which the spleen is huge, with deposits of the specific round cells in the liver, the removal of the spleen early may result in remarkable palliation, lasting so many years as practically to amount to the cure of an otherwise intractable and ultimately fatal disease.

Secondary metastatic malignant tumors of the spleen are common and are not affected by radium and x-ray to a greater extent than malignant tumors elsewhere, because the cells are characteristic of the primary growth and not of the spleen.

In conclusion, a few words with regard to the splenectomy: Make an incision just to the left of the median line, or a transverse incision of adequate size. Carry out the two fundamental surgical requirements: See what you are doing and leave a dry field. As a last admonition, do not remove the spleen when the patient is on the down grade from the disease, but rather by means of transfusions and general preoperative care, start the patient on the up-grade before operating.

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ANOXEMIA*

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ON casting about for a subject it occurred to me that you would be interested in anoxemia—low oxygen and its effect on the flier.

During the last war, or rather during its later stages, combats at elevations of 18,000 and 20,000 feet were frequent. Since 1918 there have been great improvements in planes and engines. The supercharger in particular is coming into general use in military aviation, so that in future wars we may expect most of the aerial operations to be around the 25,000 and 30,000 foot levels. Anoxemia therefore is a subject of real practical significance to those of us now connected with the Air Corps and will be, no doubt, to many of you in event of another emergency. I am only going to touch upon the salient features and we will first review briefly the normal physiology of respiration and circulation.

The limits of established life on the earth today may be fixed at five miles above and one mile below sea level.

Life, whether in the sea, on land, or in the air, requires oxygen and nature has had to make the anatomical modifications necessary to obtain it in animals, birds, and fish.

In a wide sense respiration is the exchange of gases between a living substance and the medium in which it lives. In man this takes place in the

blood through the lungs and depends upon the following physical factors:

1. Henry's law: The absorption of a gas by a liquid varies directly as the pressure.

2. The law of partial pressure: If a liquid be exposed to a mixture of gases it will absorb each gas in the proportions in which it exists in the mixture.

There are two other factors, namely: the temperature and the kind and quantity of salts in the liquid. These play but small part, so we will disregard them.

Man's respiratory system is adapted to the conditions obtaining at sea level, where the air contains about 21 per cent oxygen. In the depths of the lungs this percentage is reduced to about 15 per cent on account of dilution with residual air and water vapor. The partial pressure of the oxygen in the inspired air is reduced from 159 millimeters of mercury to 103 millimeters in the lung alveoli.

The reverse condition obtains as regards carbon dioxide: alveolar air containing about 4.5 per cent, and atmospheric air about .04 per cent; oxygen therefore diffuses inward and carbon dioxide outward.

There is a chemical ratio maintained at all times under normal conditions in the blood plasma between the carbonic acid and the sodium bicarbonates. The normal proportion is about three to sixty. If, for example, an individual exercises he produces more carbon dioxide, the carbonic acid is increased and the individual breathes more rapidly and deeply to wash out or eliminate the excess carbon dioxide and restore the normal equilibrium. The respiratory center in the brain stem which controls breathing is affected by a respiratory hormone, which is the H-ion concentration, and slight changes in this concentration cause stimulation or lack of stimulation, as the case may be.

This is a sketchy account of external respiration, but it suffices to make clear what is to follow.

ALTITUDE BLOOD CHEMICAL CHANGES*

Exposure to high altitude produces a deficient oxygenation of the blood (anoxemia) as follows:

As one ascends there is a gradual but constant lowering of pressure. At sea level, as we have seen, the oxygen pressure is about one-fifth of the atmospheric pressure (159 millimeters of mercury)—it is less in the lung alveoli; at 10,000 feet the oxygen pressure is reduced to 108 millimeters of mercury, and at 20,000 feet this pressure has been further reduced to only 74 millimeters. The diffusion of this gas is reduced directly as the pressure; consequently the blood's supply is insufficient and the condition of anoxemia exists. Concomitantly with the reduction of blood oxygen there is a decrease in the carbon dioxide. Oxygen want causes an increase in the rate and depth of respiration which washes the

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Much of the material in the paragraphs on altitude blood changes and the body compensations has been taken from the published work of the Army School of Aviation Medicine and from Major L. H. Bauer's book "Aviation Medicine."

carbon dioxid out of the blood to such an extent that the chemically basic elements predominate so that an alkalosis or relative increase above normal is present. The reduction of the blood carbon dioxid interferes with the normal carbon dioxid oxygen exchange between the blood and the tissues. Anoxemia is, therefore, a condition in which the blood oxygen is reduced below the needs of the tissues and in which the blood carbon dioxid is so reduced as to interfere with internal respiration, preventing the body tissues from utilizing what oxygen there is in the blood.

ANOXEMIA

The reactions of the body to low oxygen vary with the rapidity of its occurrence and the degree to which carried. The anoxemia of the mountain climber is of slow development, and its manifestations are quite dissimilar from the acute type occurring in the aviator. We are not concerned with mountain sickness and will dismiss it with this mention.

AVIATION ANOXEMIA

The modern airplane quickly transports the flier from normal to low atmospheric pressure and consequently the physical and mental symptoms of oxygen depletion occur quickly. In susceptible individuals symptoms may begin to develop at 10,000 feet, although most people are not particularly affected at this level. Most people, however, will sooner or later show symptoms at 15,000 feet.

BODY COMPENSATIONS

The oxygen shortage to which the flier is subjected produces an oxygen want in the tissues; he has air hunger so that he begins to breathe deeper, and somewhat later his respirations become more rapid. With these respiratory changes there is an increase in the circulatory rate. In a good reaction there is little increase in the systolic or diastolic pressure until the anoxemia is pronounced. In a poor reaction, however, at a comparatively moderate altitude, 10,000 to 15,000 feet, the diastolic pressure will fall, quickly followed by the systolic and the pulse rate, and the individual will lose consciousness. This is the fainting type of reactor. In the best type of reactor, as the pressure is reduced there will be a gradually increasing respiratory rate and depth, a gradually increasing pulse rate and systolic pressure, the diastolic pressure holding or increasing slightly until the individual's consciousness will become clouded from anoxemia before he collapses. In other words he is "out" on his feet.

SYMPTOMS NOTED ON REBREATHER TESTS

An apparatus has been devised to produce low oxygen at sea level and is used by the air medical officers to determine the ceiling or upper limit to which each flier can ascend and retain his efficiency. Numerous observations have been made, and the symptoms of anoxemia, in addition to those noted above, are in their most frequent order of occurrence as follows:

1. Inattention and loss of alertness. Purposeful movements become hesitating, groping and

inaccurate. Emotional changes—moodiness or depression, boisterousness, irritability, anger.

2. Muscular incoordination.
3. Dimness of vision and hearing. Pallor of skin with local cyanotic tinge (about the ears).
4. Double vision.

It is important to know that 90 per cent of those tested showed mental inefficiency with some motor disturbance, as the factors determining their ceiling. These men continued to function, but very ineffectually; their mentality was benumbed, and they were not aware of their own mistakes. Even after a wretched exhibition of efficiency, a reactor will frequently argue that he was doing his tasks splendidly and protest the results of the test. It is very like the hopelessly drunken individual protesting his sobriety, who, to prove his assertion, will give a ludicrous exhibition of straight walking. There are, in fact, many points of similarity between anoxemia and acute alcoholism.

The aviator is usually conscious of the fact that he needs to breathe more deeply when he reaches altitudes above 15,000 feet. He will tell you that he breathes with open mouth, more deeply and occasionally more rapidly. The insidious effects of high altitude and the impairment of the flier's judgment are well shown in Major Schroeder's report following his attempt to establish an altitude record:

I did not seem to be able to go above 23,000 feet at any time without feeling a sort of sleepy, tired, cross and hungry feeling, which I was unable to overcome except by the use of oxygen. Without the use of oxygen at these altitudes, I would feel that I was doing everything just right, and even if the aeroplane would get into some critical position and I could see when I looked down that the earth that should be underneath me was not there any more, but was way over on the side of the machine, yet I believed I was flying all right, and that my flying position was right, but the earth was in the wrong place. So after these experiences, I decided that I would have to overcome these dangers, and the way I did it was to keep my mind on one thing; and that was, when the earth was in the wrong place, use oxygen. This I did and found that it worked out very well. . . . The following experiences and sensations I noticed during my flight were due to lack of oxygen. I took off at 1:45 p. m., Wednesday, September 18, 1918, and made a steady circular climb, passing through clouds at 8000 feet, 12,000 feet, and 16,000 feet. . . . When I reached 25,000 feet, I noticed the sun growing very dim, I could hardly hear my motor run, and I felt hungry. The trend of my thought was that it must be getting late, that evening must be coming on and that was the reason the sun was getting so dim. But I was still climbing, so thought I might as well stick to it a little longer, for I knew I could reach my ceiling pretty soon, then I would go down, and even though it were dark, I could land all right, for I had made night landings many times before; and so I went on talking to myself, and this I thought was a good sign to begin taking oxygen, and I did. I was over 25,000 feet and the temperature was 60 degrees centigrade, below zero. As soon as I started to inhale oxygen, the sun grew bright again, my motor began to exhaust so loud that it seemed something must be wrong with it. I was no longer hungry and the day seemed to be a most beautiful one. I felt like singing with sheer joy as I gazed about through the small portions of my goggles, which had no frost, due to a drop of oil which had splashed on them from the motor. . . . When I was about 27,000 feet I had to remove my goggles, as I was unable to keep a steady

climb. My hands by this time were numb and worried me considerably. The cold, raw air made my eyes water, and I was compelled to ride with my head well down inside the cockpit. I kept at it until my oxygen gave out, and at that point I noticed my aneroid indicated very nearly 29,000 feet. . . . The lack of oxygen was affecting me and I was beginning to get cross, and I could not understand why I was only 29,000 feet after climbing for so long a time. I remember the horizon seemed to be very much out of place, but I felt that I was flying correctly, and that I was right and the horizon was wrong. About this time the motor quit, I was out of gasoline, the propeller stopped and everything was quiet, so I went down in a spiral. When I had descended to about 20,000 feet I began to feel much better, and realized that the lack of oxygen had affected me. . . . I noticed that, as I descended, the air seemed to be thick and stuffy, but very nice and warm.

This illustrates in a very interesting way the effects of altitude. It must not be imagined, however, that everyone can go to these heights, because most persons cannot. Major Schroeder was in the pink of physical condition, he was accustomed to flying at high altitudes, and had undergone training for this particular flight. The manner in which the symptoms of anoxemia clear up on the administration of oxygen is strikingly illustrated. Our regulations now require that oxygen be carried on all flights above 15,000 feet or on extended flights at that level.

Rockwell Field.

PHYSIOLOGY IN SURGERY*

By JOHN HOMER WOOLSEY, M. D.
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VARIOUS types of treatment frequently differ but little in the speed of recovery, the course of recovery, and not at all in the result. This is common observance to physicians, and does not pass unobserved by the laity. The facts that a jaundice neonatorum will clear as rapidly without any special treatment as it does with "liver pills"; that an infected wound will heal as quickly by rest and heat, as it does by frequent application of antiseptics, and that a duodenal ulcer in the early stages will heal as quickly by rest and diet as it does by excision or by mechanical deflection of the food, suggests that there must be some common underlying factor. This common factor is tissue function—physiology.

Today may well be called the period of physiology. The study of the preparation of the patient for operation, the postoperative care, the prevention and treatment of shock, the study of tissue metabolism, the use of various basic salts to keep the body at an even keel, the value of fluids as a whole, the balancing of the circulation in an extremity, the scientific employment of light therapy in its various forms, all evidence this to be the period of physiology.

A few years ago an operation was considered correct if performed according to the proper anatomy. Today a surgical procedure must also conform to the laws of physiology. Even the

minutest detail of the procedure should be with tissue function in mind. From the standpoint of physiology the following subjects are of paramount interest to us in surgery; tissue growth and repair, the body's need of fluid, the body's need of the inorganic compounds, and atraumatic technique.

TISSUE GROWTH AND REPAIR

For the first six days in wound healing, the connective tissue cells are soft and succulent, while by the tenth day as a rule, they are of a firm, strong type. On such observations our opinions are based on allowing the patient up and about by the tenth or twelfth day postoperatively. The epithelial cells grow across the severed area or over the wound by a gradual proliferation of young tender cells. It is important to treat both these connective tissue and epithelial cells with great care, yet, repeatedly one observes chemicals or antiseptics being employed that injure or kill these cells far more than they ever kill or inhibit infection.

During the recent great war we learned, as never before, the rôle of devitalized tissue. It acts as a nidus for infection. A wound never heals until the dead tissue is removed or extruded. Yet one frequently sees such wounds, especially those of the hands, being allowed to go on day after day without proper treatment—a debridement.

Granulation tissue in a wound or after a burn is repeatedly and wrongly cut away or cauterized, causing thereby a correspondingly thickened scar. The proper treatment such as the mechanical cleansing of the area, a dressing to aid in epithelialization or early employment of skin grafts, would have allowed earlier healing and given results far less disfiguring.

Article after article on skin grafting emphasize the importance of the preparation of the area to be grafted, the type of dressing or such other aspects of the problem, but fail to consider or emphasize or relate the procedure to the basic physiologic principle upon which successful skin grafting rests—the securance and maintenance of a sufficient blood supply to the graft. Any procedure or any dressing must obtain this if success is to follow.

The Orr treatment for osteomyelitic processes now occupies a prominent place in our medical journals. This treatment has a real physiologic basis—growth of tissue without interference. What does a large proportion of our profession do? They accept this without consideration as they do most anything published. They employ it without due regard to other concomitant basic conditions such as the condition of the tissue involved, the acuteness of the infective process or the type of infection present. A critical sense here, as elsewhere, is a protection.

Gentleness, chemical and mechanical, in order not to injure the growing cell but to assist it, and measures to assist in securing and maintaining an adequate blood supply, be it rest, elevation, immobilization, pressure, vaselin dressings, or

* Chairman's address, General Surgery Section, Fifty-Eighth Annual Session of the California Medical Association, May 6 to 9, 1929.

heat, are methods based upon sound physiology; methods at the basis of all proper treatment and should be more widely and more intelligently used.

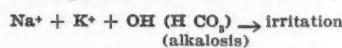
FLUIDS

Water is a constituent part of all the tissues of the body and varies in content from 50 to 90 per cent according to the tissue. Offhand this should make one think that fluid in the treatment of physical ailments is most important. Indeed this is quite widely recognized but, I am confident, too seldom applied. The elimination of the body waste products is by the intestinal, urinary, respiratory and cutaneous tracts, and any interference with their function reacts unfavorably upon the patient's general condition. Fluid in proper amounts is the primary factor in aiding the processes of waste elimination. Where dehydration is present preoperatively, it is far more important to give the patient fluids than it is to proceed with surgery too soon. During operation a patient loses considerable fluid by the skin and respiration, and this should be replenished and even greater supply given while the patient is undergoing such a strain. Every patient having a major operation should, in my opinion, have during operation, subcutaneous salt solution administered. Especially is this true in obstructions of the gastro-intestinal tract, in thyrotoxicosis, in surgery on the kidney, and in prolonged surgical procedures under ether anesthesia. Postoperatively the maintenance of the fluid intake has demonstrated beyond question that the clinical course is far smoother and safer. Three thousand cubic centimeters daily should be the goal of intake of the average adult, and for children a comparable amount according to age. It can best be given in the thigh, inner or outer side, as one prefers. Subpectoral clysis undoubtedly interferes with the respiratory movement.

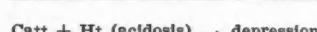
The caloric value of fluids is of importance, it is true, but only secondarily so. When needed, the 10 per cent glucose properly prepared and given intravenously is recommended. Stronger solutions are more likely to injure the wall of the vein or give complications if leakage occurs.

INORGANIC COMPOUNDS

The function played respectively by the substances, sodium, potassium, calcium, phosphorus, iodin, and chlorin is right now the active study of physiologists and clinicians of the world. As students we learned that sodium, potassium, and calcium in some way maintains the body balance in fluids and that sodium and potassium have an irritant effect, while calcium has a depressant effect upon tissue reactions. We see, in alkalosis, where the sodium or potassium ion predominate or where the calcium ion is lacking, an irritant effect even to tetany, while under opposite conditions, in acidosis, a depressant effect is obtained.



K (constant) =



In this equation if the numerator is increased or the denominator decreased, alkalosis will occur with increased irritability of the tissue, while if the opposite occurs acidosis takes place and a depression of tissue function. We have no more specific knowledge for clinical use of the sodium or potassium ions, but knowledge of the calcium ion has increased.

Calcium deficiency is noted in the loss of parathyroids—is unavailable in instances of loss of gastric or duodenal secretions, whether this be by vomiting, by fistula, or by continuous gastric or duodenal lavage, and plays a part in the failure of the clotting of the blood in jaundice. Calcium can most quickly be replaced by intravenous administration of 10 cubic centimeters of 5 per cent calcium chlorid. Collip's parathyroid hormone may be used subcutaneously, but takes approximately twelve hours to obtain maximum effect and consequently is of value only over a long period of stimulation. Calcium lactate by mouth, if given two to three hours before ingestion of food and with some lactic acid preparation, as buttermilk, is also effective, but is not effective when taken immediately after meals, according to Gunther and Greenberg.

The magic effect of phosphorus and calcium combined with ammonium chlorid in lead poisoning—locking up the lead in the osseous system and then liberating it at intervals in almost determinable amounts has reduced the risk in these patients.

Iodin in the form of KI, Lugol's solution, has provided the means for the preparation of the hyperplastic, thyrotoxic patient, so that the operability of this condition is increased to approximately 100 per cent. A warning is, however, necessary to those who attempt to use it over a prolonged period as a cure, for thereby good risks are changed into desperate conditions and unhappy results have and will occur.

The chlorin ion is considered more important today by some than its basic ion, sodium. The combination is more likely the explanation. Orr and Haden and others have demonstrated the tremendous benefit of sodium chlorid in loss of upper gastro-intestinal juices as in obstruction, fistula, and gastric lavage. The method of gastric and duodenal drainage as originally described by Bassler and Matas, and to which the Connel suction has been adapted by Ward, should be employed in degree to the patient's condition and coincidentally fluids, preferably sodium chlorid, should be given as recommended above.

ATRAUMATIC TECHNIQUE

Atraumatic technique in gastro-intestinal surgery, my chief interest, is equally as applicable to other aspects of surgery. Gastro-intestinal surgery means opening of the peritoneal cavity, the exposure of the viscera to a condition for which they are not prepared, the severance and apposition of a relatively easily injured tissue, a contact with infectious processes, and interference, be it

less or great, with the portion of the human anatomy that has more than all others to do with assimilation and metabolism.

As a student, it was assigned to me to demonstrate the shock of acapnia, described by Yandell Henderson. This experiment made a tremendous impression upon me, and today, as a result of this demonstration, to a large extent I take the utmost care in protecting the viscera from undue exposure. I recommend this to you in the fullest degree. The type of incision, the less retraction of the wound, the exposure from the abdominal cavity of only the area to be repaired, and the use of hot, moist tapes are the essentials.

Could one see each individual cell with the naked eye, what injury of tissue would be our vision. The avoidance of contusing and crushing clamps where possible, the clean knife-blade severance of tissues, the noninjury of blood supply, the careful hemostasis with fine, nonirritating suture material, and the careful approximation of tissue with nontraumatic needles and proper sized, absorbable suture means quicker healing, less absorption of broken-down proteose material, and therefore less shock.

One would not think of radical surgery in an acute or subacute, pelvic condition. One would not attempt any constructive surgery in the presence of an infectious lymphangitis. It has been demonstrated that the gastro-intestinal wall is pervious to a dye such as acriflavin. It has been observed that in a colitis, microorganisms invade the bowel wall and contiguous tissue. In inflammatory conditions, as a large, penetrating, or slowly perforating duodenal or gastric ulcer, or in an intestinal obstruction, be it acute or chronic, as from a malignant, rectal growth, there is a septic invasion of the bowel wall and neighboring tissue. The peritoneum will handle only a relative amount of infection, and the body functions of assimilation, metabolism, and elimination under such circumstances are already quite disturbed. Therefore it is our duty not to proceed with radical surgery in these inflamed, potentially infected areas, and expose wide, raw surfaces for septic absorption. We should first allow the tract to return to normal by some more temporary or multiple stage measure, as, for example, a Billroth II or Devine exclusion procedure for a complicated duodenal or gastric lesion; a cholecystostomy for an acutely infected gall bladder; or a preliminary enterostomy for a malignant obstructive lesion of the intestinal tract.

CONCLUSIONS

1. In consideration of publications and recommendations let us always have a critical sense.
2. Before we proceed with surgery let us ask ourselves this question: Will this procedure aid the body processes to return to normal the most surely and the most completely?
3. Let us not be just skillful artisans, but let us be scientific surgeons and mindful of the importance of anatomy and pathology, let physiology guide our surgery of today and tomorrow.

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CARDIOSPASM*

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DISCUSSION by D. D. Comstock, M.D., Los Angeles;
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GENERAL CONSIDERATIONS

THE esophagus is a neuromuscular tube about nine inches long. It connects the pharynx with the stomach and serves for the passage of food. Much of our conception of the physiology of deglutition we owe to Meltzer¹ and Cannon² and to their respective coworkers.

In the process of swallowing, a solid bolus is propelled by the wave of peristalsis, which is characterized by the simultaneous dilatation of the lower segment immediately in front of, and constriction behind the bolus. On arriving at the cardia the sphincter, which is ordinarily closed, relaxes for a moment to let the food pass into the stomach. On account of the difference in the musculature the rate of peristalsis is much faster in the upper part than in the lower. The innervation of the esophagus is derived from the vagus and sympathetic fibers—plexus of Auerbach and Meissner. Cannon has shown that in the lower part of the esophagus the waves of peristalsis travel independently of the vagus. Thus the sympathetic nerves of the lower esophagus and cardia are capable of the propulsion of food when called upon, regardless of the integrity of the extrinsic nerves.

One of the disorders of the lower esophagus in which dysphagia and obstruction play a prominent feature is cardiospasm. This is characterized by dilatation and hypertrophy of its musculature associated with functional stenosis of the lower end, usually of slow onset and long duration.

HISTORICAL

The first authentic case of cardiospasm appears to have been reported by Purton³ in 1821. In 1878 Zenker and von Ziemssen⁴ collected seventeen cases in the literature. Little interest was aroused, however, until 1881, when von Mikulicz⁵ recognized and described the etiological significance of spasm in diffuse dilatation of the esophagus. The original theory of Mikulicz placed the site of the disease at the cardia, and the spasm as the primary cause, hence he called this condition cardiospasm.

Rosenheim⁶ attributed the cause to atony of the esophageal musculature.

Krause⁷ suggested that simultaneous development of cardiospasm and paralysis of the circular

* A Critical Review of the Literature—With Analysis of Forty-Four Cases Treated at the Massachusetts General Hospital During the Past Fifteen Years.

Thesis submitted to the faculty of the Graduate School of Medicine, University of Pennsylvania, Philadelphia, in partial fulfillment of the requirement for the degree of Master of Medical Science.

The final year of graduate study under the extramural preceptorship of Harris P. Mosher, M.D., professor of laryngology, Harvard Medical School; chief of throat service, Massachusetts General Hospital and Massachusetts Charitable Eye and Ear Infirmary, Boston, Massachusetts.

muscle, due to degenerative change in the vagus, might be the etiology.

Einhorn⁸ in 1888 considered that the obstruction might be due to the incoordination of the muscular movement of the esophagus.

Rolleston⁹ in 1896 advanced a similar view, but more explicitly placed the fault on the longitudinal muscular fibers, in that they did not help to dilate the cardia at the moment when the esophagus was ready to propel food into the stomach.

Zenker and von Ziemssen⁴ thought the condition was congenital in origin. Walton¹⁰ entertained a similar view and stated that the incoordination action, whether it was spasmotic or simply a failure to relax, must have been present at birth. He argued that a considerable number of cases have been reported in young children; that many adults, when care was taken in eliciting the history, dated their symptoms back to early childhood; that among those whose symptoms were of a comparatively short duration roentgenological and esophagoscopy examinations often revealed advanced pathological changes in the esophagus, all of which strongly pointed to a congenital origin.

Held and Gross¹¹ believed that (*a*) the vegetative nerve imbalance, due to inherited weakness; and (*b*) the involvement of the vegetative system due to an inborn status asthenicus or status thymocolymphaticus, play an important rôle in the etiology of this disease. They also named (*c*) the infections by toxic and metabolic agents; (*d*) the reflex irritability from the neighboring organs as kidney, liver, and gall bladder; the diseases of lungs, of stomach and intestine; or (*e*) local disorders within the gullet as factors in the production of this condition.

Through anatomical, clinical and roentgenological studies Doctor Mosher¹² has clearly demonstrated that inflammatory changes in the structures both above and below the diaphragm brought on this condition. He has not insisted, however, that this was the sole cause of the disorder. He feels that there is an element of stricture and backward twist at the lower end of the esophagus, and that these two causes often act together.

In recent years Hurst¹³ and independently of him, Brown Kelly¹⁴ pointed out that fibrosis of Auerbach's plexus at the lower end of the esophagus interfered with the normal neuromuscular mechanism. They compared this process to the heart block which is caused by the degenerative change in auriculoventricular bundle. As to the fundamental causes of this neurotrophic disturbance nothing definite is yet known.

INCIDENCE

Age.—The ages vary. Jackson¹⁵ treated an infant two days old in whom esophagoscopy was done, effecting a cure. Langmead¹⁶ reported a case in which the typical symptoms occurred immediately after birth, and at eighteen months roentgenogram and esophagoscopy confirmed the original diagnosis.

The youngest patient treated at the Massachusetts General Hospital was a boy five months old, the oldest a man seventy-two years of age. From

the hospital records there, the writer collected forty-four cases of cardiospasm which occurred between November 1911 and November 1926, a period covering fifteen years. Of this number about one-half were in the third and fourth decades.

Sex.—Exclusive of those cases of globus hystericus in which there was no characteristic change in the esophagus, and by reason of which could not properly be classed as true cases of cardiospasm, there were twenty-five males and nineteen females, or, roughly speaking, a ratio of 5 to 4. Vinson¹⁷ collected a series of five hundred cases at the Mayo Clinic; of these, 294 were males and 206 females. The ratio of these figures corresponds closely to those collected at the Massachusetts General Hospital.

SYMPTOMATOLOGY

In well-developed cases the symptom-complex is pathognomonic. Those cases that seek our aid are usually of long standing, always progressive since their beginning. The onset may be insidious or abrupt. Pain, dysphagia, and regurgitation are the three cardinal symptoms.

In the series of cases just mentioned, pain of more or less severity was recorded in eighteen. Earlier in the disease the pain was no more than a sense of discomfort, invariably intermittent, lasting only an hour or two, followed with a variable period of freedom. There was substernal pain in ten, and four of these described this as being sharp and lancinating. The remaining eight had epigastric pain which radiated at times to the back and especially to the left shoulder. These patients were not infrequently treated as having a mild form of indigestion or possible cholelithiasis.

In fourteen patients dysphagia was the prominent symptom. These people complained of food "sticking under the sternum" and took quantities of liquids to wash it down. Later each act of deglutition was accompanied by more or less obstruction as the food passed the cardia. The patients voluntarily selected a type of food which they could take with the least difficulty. As a rule solids caused more trouble and required considerable mastication. A few subsisted on liquids or semisolids only. The temperature of the food ingested had a definite influence on some. Usually extreme heat or cold was not well borne.

Finally there was another group of twelve, the characteristic manifestation being regurgitation. At first this was intermittent, only a mouthful or two being lost during or after a meal. With dilatation of the esophagus, however, regurgitation was delayed for hours or even days. In a few cases nocturnal regurgitation had been reported; this carried a danger of possible lung complication. The quantity of fluid regurgitated at times was more than the meal just taken, indicating stagnation of food from the previous meals or collection of saliva. Lactic acid, butyric acid, and other fermentative products were not infrequently in the regurgitated material.

When the obstruction persisted because of so little food reaching the stomach, the patients

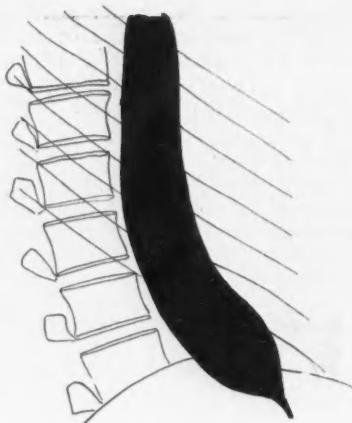


Fig. 1.—Spindle-shaped or fusiform esophagus.

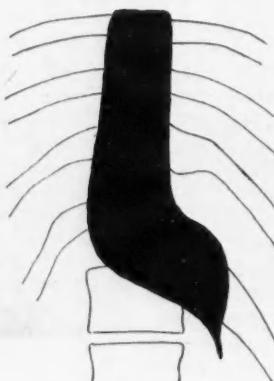


Fig. 2.—Pear-shaped or flask esophagus.

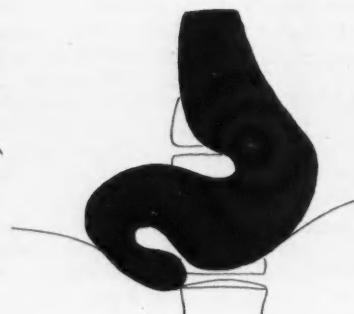


Fig. 3.—S-shaped esophagus.

steadily lost in weight. One of these cases was a woman who lost ninety pounds in five years, and another was down to sixty-eight and one-half pounds at the time of her admission.

PATHOLOGY

Site of Stenosis.—Originally Mikulicz laid the site of stenosis at the cardia. In recent years, however, this view has been much modified. The presence of the physiological sphincter has long been recognized.

Experimental work on rabbits by Payne and Poulton¹⁸ has clearly shown that the part of the esophagus that plays sphincteric action extends some little distance above the diaphragm. Hurst¹⁹ regards the last two or three inches of the human esophagus comprising the whole of the abdominal portion and sometimes to a very small part of the thoracic portion, as the sphincter. He bases this view upon the observation made during laparotomies performed for the relief of cardiospasm and a study of the esophagus in stillborn infants. Brown Kelly¹⁴ holds a similar view, and it is at this portion of the esophagus that many other English observers place the site of "achalasia."

Jackson,¹⁹ on the other hand, denies the presence of a sphincter at the lower end of the esophagus. He locates the cardiospasm at the "hiatus esophageus," and the spastic constrictions are of specialized muscle fibers there encircling the esophagus—the "diaphragmatic pinchcock."

Roentgenologic, esophagoscopic, and anatomic studies extending over a period of years led Mosher¹² to believe that the site of stricture is at what he terms the "liver tunnel." The terminal portion of the esophagus is not only surrounded by the cone of the diaphragm, but it is also encased by the left lobe of the liver. Owing to the position of the liver in front and the stronger left crus of the diaphragm behind, the terminal portion of the esophagus consists of a vertical part and a horizontal part. Where the two meet, the esophagus twists on itself and turns to the left.

In fluoroscopic studies on normal persons during the act of deglutition, when the diaphragm is

up, the esophagus comes to a nipple-like point in the middle of the liver tunnel. With inspiration, when the liver is pressed down together with the diaphragm, then immediately the esophageal content is emptied into the stomach. In a certain number of cases of cardiospasm, Mosher pointed out, there is what he calls "reverse phenomena" in which the esophagus is closed momentarily when the liver is down, and opens when the liver is up. He considers that both the upper edge of the liver tunnel and the area at the junction of the two arms of the terminal portion of the esophagus are the usual sites of stenosis.

Dilatation.—Lambert²⁰ described three types of dilatation:

(a) The fusiform or spindle-shaped esophagus which is the commonest form of dilatation. It is characterized by the gradual widening of the lumen about midway between the cricoid cartilage above and the cardia below, where it gradually tapers to its normal size (Fig. 1).

(b) The pear-shaped or flask esophagus, the type on which Mikulicz laid special stress, is one in which the lower one-third or one-half of the esophagus is so dilated that it may at times be capable of holding two pints or more (Fig. 2).

(c) The S-shaped is the rarest type. The two ends of the esophagus being fixed, with the increase in length, the esophagus bends until it becomes S-shaped (Fig. 3).

Hypertrophy.—Microscopically all the layers are thickened. The epithelium is generally thinned out. Later, as the fluids accumulate and fermentation goes on, the superficial layers are eroded and at some areas the entire epithelium is denuded. The mucosa is definitely thickened with evidence of chronic inflammatory changes as shown by the preponderance of plasma cells, small lymphocytes, and a few scattered polymorphonuclear leukocytes. The muscularis mucosa is also thickened. There is considerable fibrosis in the submucosa. Here the blood vessels increase in number as well as in

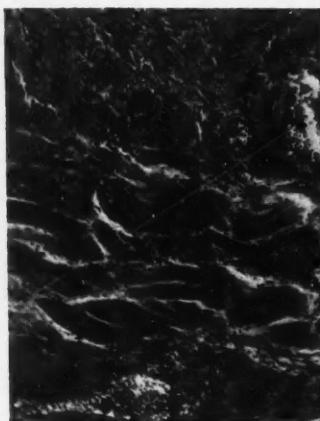


Fig. 4.—Longitudinal section of the esophagus at the lower end in a case of Doctor Mosher's. Male, 50, white; fifteen years' duration, finally died of pulmonary tuberculosis. The thickened muscular mucosae shown in the center. The chronic inflammatory cells invading the deeper structures. Note the prominence of the blood vessels. Photograph by the writer.

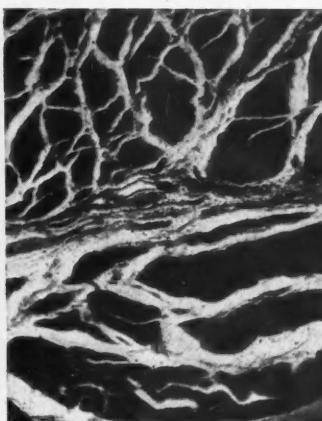


Fig. 5.—Hypertrophic muscular coats and the plexus of Auerbach without any ganglion cells. According to Dr. G. W. MacGregor, who prepared this tissue section, the average thickness of the inner coat measured 1.4 mm., the outer coat 1.1 mm., and the muscularis mucosae .3 mm. At the upper end of the esophagus one ganglion cell to four sections, and no cells in one hundred sections at the lower end. Photograph by the writer.

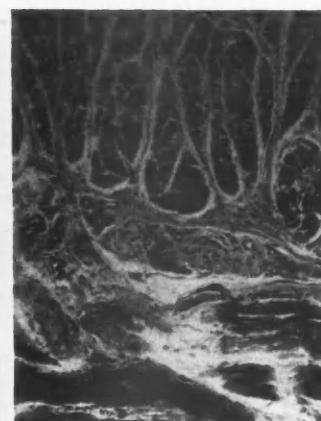


Fig. 6.—Longitudinal section of the lower end of esophagus of child at birth. The ganglion cells in Auerbach's plexus shown in the center. Photograph by the writer.

size, with marked perivascular infiltration by the inflammatory cells (Fig 4).

Both muscular layers are greatly hypertrophied (Fig. 5).

Associated with these changes there is perceptible diminution of ganglion cells in Auerbach's plexus. This is particularly conspicuous at the lower end and over the area where the dilatation is greatest (Figs. 6, 7, and 8).

Recently Irwin Moore²¹ collected a series of pathologic specimens and published an excellent paper dealing with this phase in the study of cardiospasm.

DIAGNOSIS

The diagnosis is rarely difficult. If care is taken in eliciting the history it seldom leads to a wrong conclusion. The pain may simulate gastric ulcer or gall-stone colic. Syphilis and the previous swallowing of caustic must be excluded. Benign stricture at the cardia is rare.

Fluoroscopic Technique.—Fluoroscopic examination is the best means at our command. At Doctor Mosher's clinic the following procedure is usually carried out: The patient is stripped above the waist to the skin and a sleeveless gown is placed over his head. He stands behind a fluoroscopic screen, facing the examiners—the roentgenologist, the surgeon and his assistants. Rapidly but carefully the patient's heart, lung fields, and the movement of the diaphragm are noted; then the attention is focussed on the esophagus and the fluid level is noted if present. A sufficient quantity of bismuth-milk mixture, usually about one-half glassful, is given by mouth and the contour of the esophagus is studied from the front and from the side. The opaque meal reveals the presence or absence of abnormal peristalsis, of hyperirritability, of hernia and diverticulum. As the fluid accumulates at the lower end, special atten-

tion is paid to the relation of the emptying time to the excursion of the diaphragm, the position of the lung tips and all other features that might assist in the diagnosis. Doctor Mosher's olive-tipped bismuth-coated rubber bag is indispensable in this work. It is much like the original Sippy bag and an inflating tube is connected to the ordinary Tyco sphygmometer as an indicator of the pressure exerted within. Rarely the pressure of more than five or six pounds is required. After the bag is withdrawn another glassful of the opaque meal, to which is added a dose of Seidlitz powder, is given. In a mild form of stenosis the



Fig. 7.—The cast of esophagus and stomach in case of cardiospasm. The esophagus moderately dilated at the lower half. From Doctor Mosher's laboratory, Harvard Medical School. Photograph by Werner Mueller.



Fig. 8.—The same case. The esophagus is opened, showing the dilatation and the thickness of the wall. Photograph by Werner Mueller.

effervescent salt often overcomes the resistance. This is again studied under the screen. Inhalation of a vial of amyl-nitrite broken in a handkerchief accomplishes the same object. Several roentgenograms are then taken, in both anteroposterior and lateral positions, to check the fluoroscopic findings and again the roentgenologist and the surgeon go over the films together to avoid possible errors in the diagnosis.

Finally esophagoscopy is performed and the local disorders, such as ulcer, carcinoma, fissure, etc., are eliminated. Malignancy at the cardia, at times, is difficult to differentiate. In doubtful cases biopsy is done.

TREATMENT

The treatment of cardiospasm is essentially symptomatic. Shaw and Woo²² classified the treatment according to the severity of the symptoms:

(a) Those of slight degree of obstruction require only careful dieting and attention to the general hygiene. The food should be nonirritating, highly nourishing in nature. This includes plenty of eggs, milk, cream, butter, well-cooked cereal, and fine vegetables. Meat should be given sparingly, if any, and then only scraped. It is much better to give a smaller quantity of food at frequent intervals.

(b) Those of more marked symptoms, but admitting a small-sized bougie, should have careful, systematic dilatation. This is by no means a new method. As early as in 1888 Russell²³ reported a sufficient series of cases to demonstrate the efficacy of this procedure.

For this purpose the Mosher bag is introduced under a fluoroscopic screen. When the tip drops into the hiatus the bag is gently passed an inch or two and a measured amount of air pressure is carefully exerted by inflating the bag. Excellent results are obtained by this method, and the patients may remain free from symptoms for weeks at a time when another such treatment is repeated.

(c) Finally those cases in which the obstruction is so complete as to prevent admission of even the smallest bougie should have gastrostomy, followed by some form of dilatation. Walton successfully treated sixteen such cases with only one death and that in a man sixty-six years of age, who was already extremely emaciated, and died of heart failure seven days after operation.

Sedatives, which were much in vogue in the past, can no longer be considered efficacious. In view of the fact that a large number of these patients have a long-standing history, even dating back to childhood, every effort should be made for an early recognition of the presence of the condition, and proper and prompt treatment be instituted by the hands of an expert.

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REFERENCES

- Kronecker, H., and Meltzer, S. J.: Der Schluckmechanismus seine Erregung und seine Hemmung, Arch. f. Physiologie, Suppl. vol. 328, 1883. A Further Experimental Contribution to the Knowledge of the

Mechanism of Deglutition, J. Exper. Med., ii, 453, 1897.

2. Cannon, W. B., and Moser, A.: The Movement of the Food in the Esophagus, Am. J. Physiol., i, 435, 1898.

3. Purton: London Med. and Phys. J., xlvi, 1821 (the original article not consulted). Quoted by Zenker, F. A., and von Ziemssen, H.: Diseases of the Esophagus, Translated by Wheelock, G. G., and Magie, D., Cyclopedia of the Practice of Medicine, viii, 46, 1878.

4. Zenker, F. A., and von Ziemssen, H.: The Diseases of the Esophagus in Cyclopedia of the Practice of Medicine, viii, 50, 1878.

5. Von Mikulicz, J.: Zur Pathologie und Therapie des Cardiospasmus, Deutsche Med. Wochenschr., xxx, 17, 50, 1904.

6. Rosenheim, Th.: Ueber Erweiterung des Esophagus ohne Anatomische Stenose, sog. Idiopathische, Berl. klin. Wochenschr., xxxix, 235, 265, 288, 1902.

7. Krause and Lossen: Ueber Idiopathische Esophaguser Weiterung, Deutsch Med. Wochenschr., xxix, Ver.-Beil. 94, March 1903.

8. Einhorn, Max: A Case of Dysphagia with Dilatation of the Esophagus, Med. Record, xxxiv, 751, December 29, 1888.

9. Rolleston, H. D.: Simple Dilatation of the Esophagus, Tr. Path. Soc., xlvi, 38, December 3, 1896.

10. Walton, A. J.: Surgical Treatment of Cardiospasm, Brit. J. Surg., xii, 701, April 1925.

11. Held, I. W., and Gross, M. H.: Cardiospasm, J. A. M. A., lxvi, No. 4, 236, January 22, 1916.

12. Mosher, Harris P.: Cardiospasm, Penn. M. J., xxvi, 240, January 1923. Finding with the Barium Bougie in Cardiospasm, Ann. Otol., Rhin. and Laryng., xxvi, 1124, December 1927.

13. Hurst, A. F.: Treatment of Achalasia of Cardia, Lancet, i, 618, March 19, 1927.

14. Kelly, Brown: Nervous Affections of Esophagus, J. Laryng. and Otol., xlii, 221 April 1927.

15. Jackson, Chevalier: Peroral Endoscopy and Laryngeal Surgery, Laryngoscope: St. Louis, Mo., 507, 1915.

16. Langmead, F.: Notes on a Case of Esophagectasia in an Infant, with Radiograms, Proc. Roy. Soc. Med. (Sec. Stud. Diseases Children), 43, March 1920.

17. Vinson, Porter, P.: Cardiospasm, New Orleans M. and S. J., 483, February 1926.

18. Payne, W. W., and Poultton, E. P.: Visceral Pain in the Upper Alimentary Tract, Quart. J. Med., xvii, 53, 1923.

19. Jackson, Chevalier: Bronchoscopy and Esophagoscopy, Ed. 2, Philadelphia, W. B. Saunders Co., 73, 1927.

20. Lambert, A. V. S.: Treatment of Diffuse Dilatation of Esophagus by Operation—Description of a Hitherto Unpublished Method—Report of a Case, Surg. Gynec. Obst., xviii; i, January 1914.

21. Moore, Irwin: Pathology of Esophagectasia, J. Laryng. and Otol., xlii, 577, September 1927.

22. Shaw, H. Batty; and Woo, A. W.: Six Cases of Esophagectasis, Proc. Roy. Soc. Med. (Med Sec.), x; Part 2; 19, November 1916.

23. Russell, J. C.: Diagnosis and Treatment of Spasmodic Stricture of the Esophagus, Brit. M. J., i, 1450, June 4, 1898.

DISCUSSION

D. D. COMSTOCK, M. D. (401 Bailey Street, Los Angeles).—There are many things about cardiospasm that would lead one to concur in the opinion expressed in Doctor Hara's paper that the background of this affliction is an inherited lack of balance in the vegetative nervous system, in which predisposing soil there has been cultivated an added factor of nerve stress and strain with nutritional deficiency. It seems apparent also in most cases that in the course of time a chronic inflammatory element is added. In one of our

patients this was so evident that hot and cold douching of the esophagus was resorted to with definite benefit. This was accomplished by passing a small stomach tube into the pouch and alternately filling and aspirating the contents by the use of a hard rubber syringe. By thus washing out the mucus and decomposing food, the passage of the silk thread was facilitated. We have observed patients in whom tenacious milk curds and other foods would be retained for hours or even days. This atonic and dilated state of the esophagus is doubtless as much a part of the affliction as the cardiospasm itself and not simply secondary. It therefore should receive therapeutic consideration from the start. In one of our patients the stricture became so pronounced that not even water would pass through and, of course, neither was the passage of the thread successful. But before resorting to a gastrostomy a very gentle but persevering effort was made to pass a small-sized piano-wire bougie direct. This was passed down to the stricture through a quite stiff stomach tube which was not fenestrated on the side. After a half-hour of teasing, the bougie was successfully passed and, of course, the rest was easy. It should be added that thorough lubrication of the inside of the stomach tube was necessary.

One having much of this work to do should learn to build his own dilating bags which, if designed somewhat after the lines of an hourglass, are more sure to be held firmly in the stricture during the process of dilatation. The suggestion that emphasis should be placed upon building up the general nerve and muscle tone and nutrition of the patient is important.

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KENNETH S. DAVIS, M. D. (Saint Vincent's Hospital, Los Angeles).—The chief roentgenographic characteristics of typical cardiospasm are the smooth, symmetrical, blunt or conical obstruction at or near the cardia and the secondary dilatation of the esophagus above. This dilatation is usually marked; in some instances involving the entire esophagus. In cases of long duration the esophagus is usually somewhat elongated and may become either kinked or S-shaped. Thus we find the spindle-shaped, the pear-shaped, and the S-shaped types of dilated esophagus as described in the article under discussion.

Reversed peristalsis may be seen during the fluoroscopic examination; this finding, however, is very rare. Quite commonly the dilated esophagus is found to be filled with fluid through which the opaque barium slowly sinks in blobs.

From the roentgenographic viewpoint cardiospasm is to be differentiated chiefly from carcinoma and benign organic stricture. Carcinoma seldom ends exactly at the hiatus and there is usually noted an irregularity of the lower end of the barium shadow, whereas in cardiospasm the shadow is symmetrical and smooth. Furthermore carcinoma rarely causes the extreme dilatation of the esophagus so commonly seen in cardiospasm. Posttraumatic strictures generally occur higher in the esophagus than the cardia, and one can reasonably expect some irregularity at the site of the lesion. As Hara has already pointed out, an inquiry should be made as to the swallowing of corrosives in all suspected cases.

In view of the fact that filling defects at the site of the obstruction do not always signify organic lesion, and smooth, symmetrical regularity always indicate cardiospasm, great care should be taken to carefully coördinate the clinical and the roentgenographic findings. Esophagoscopy should be done in any case with indefinite clinical and roentgenographic findings.

The author states that gastrostomy should be performed in cases of cardiospasm in which bougies cannot be passed. In a large series of cases Vinson has seldom found it necessary to resort to this procedure, due to his success in passing bougies. He does this by first having the patient swallow a thread which, when anchored, serves as a guide for the bougie. By tensing the thread the bougie can be directed exactly

to the constricted area which is then dilated. This method also eliminates danger of perforation.

For the fluoroscopic examination of the esophagus a special barium acacia mixture is commonly used. This mixture is exceedingly viscous and descends the esophagus slowly with a tendency to coat its walls rather than fill the lumen. In this manner filling defects are brought into plain view which ordinarily would be missed.

ACTINOMYCOSIS*

REPORT OF CASES

By NORMAN EPSTEIN, M. D.
AND
PAULA SCHOENHOLZ, M. A.
San Francisco

DISCUSSION by George D. Culver, M. D., San Francisco; H. J. Templeton, M. D., Oakland; Roy W. Hammack, M. D., Los Angeles.

ACTINOMYCOSIS is a well-known clinical entity and has been carefully described in all its details by many observers. The purpose of this report is to summarize some advances which have contributed to a better understanding of the condition, and have led to a more rational plan of treatment. The discussion is limited to actinomycosis of the jaw.

EARLY STUDIES ON ACTINOMYCOSIS

The view that actinomycosis is contracted by the introduction of such substances as infected grain, straw, and grasses into the oral cavity dates back to the work of Bostroem¹ in 1890. He had isolated a streptothrix from human cases of actinomycosis which was apparently identical with an organism found widespread in nature upon grasses and grains. This theory has been handed down in textbooks and in the lecture room since that time. Homer Wright² showed that the true *Actinomyces bovis*, first described by Israel and Wolff³ in 1878, is not found outside of the animal body and that it has quite different cultural characteristics from the streptothrix of Bostroem. *Actinomyces bovis* is a compulsory anaerobe, difficult to grow, and grown best at body temperature. On the other hand Bostroem's organism grows luxuriantly on ordinary culture media, at room temperature, and is an aerobe.

F. T. Lord⁴ in 1910 reported that he had isolated *Actinomyces bovis* from carious teeth and cryptic tonsils in patients who had no evidence of actinomycosis. This work seems to indicate that *Actinomyces bovis* may be a saprophyte which exists in the normal mouth and gastro-intestinal tract.

The source of infection in many cases of actinomycosis has been quite obscure, no history of contact with infected cattle being obtained. Many patients deny that they chew straw or grass or that they have been connected with rural life in any way. From a clinical standpoint it would seem more probable that the organisms exist as

* From the Department of Dermatology and the Hooper Foundation for Medical Research of the University of California Medical School.

¹ Read before the Dermatology and Syphilology Section of the California Medical Association at its Fifty-Seventh Annual Session, April 30 to May 3, 1928.

saprophytes in the mouth and gastro-intestinal tract and become pathogenic when the resistance of the tissues is lowered because of factors such as trauma and infection.

Although' actinomycosis is unknown in California, Sanford and Voelker⁵ were able to collect six hundred and seventy cases of the disease from the literature and by personal communications. It is found most commonly in the northwestern and middle-western states, but it occurs everywhere in the United States.

Males are affected more commonly than females, 80 per cent and 20 per cent, respectively. It is mainly a disease of youth, most cases occurring between the ages of twenty to thirty, but no age is immune. The disease may attack any tissue or structure of the body. In approximately 60 per cent of the cases the condition begins somewhere about the face and neck, 18 per cent occur in the abdominal wall and viscera, usually starting about the cecum and appendix and from there spreading to the liver. Fourteen per cent are found in the thorax. The bones are rarely involved. Primarily actinomycosis of the skin is quite unusual, the process usually involving the skin secondarily.

BACTERIOLOGY

The classification of actinomycosis has been a complicated and a much disputed question. Bostroem, Wolff and Israel, and Affanassjeff consider them bacteria; de Bary, Harz, Gasperini, Sanvagean and Radais place them among the hyphomycetes; while Rossi, Doria, Claypole, Kruse, and Lieske place them between these two groups.[†] On the one hand actinomycetes resemble bacteria in size, thread formation, branching and arthospore formation; on the other hand, hyphomycetes may be distinguished from the actinomycetes by the size of the cells, their cell content and lack of radial striations. According to Lieske the actinomycetes can be considered phylogenetically as higher bacteria, or reduced thread fungi, or a common antecedent of the bacteria and fungi. The following diagram will explain the relationship of the actinomycetes to the fungi and bacteria.

Actinomycetes < Oidium, Hyphomycetes
Mycobacteria, Korynebacteria, Bacteria

Pathogenic as well as saprophytic strains of actinomycetes are found widely distributed in nature. It is thought that the saprophytic strains are predominantly aerobic. The pathogenic strains isolated from infected tissue are anaërobic. All the intermediary forms from the long-threaded aerobic to the anaërobic bacillus-like type may be found.

Actinomycetes can be readily cultivated on bouillon agar gelatin, milk, blood serum, potatoes, and other media. The reaction should be neutral since strong acid or alkali inhibits growth. Liquid media do not become turbid during growth, but fine white flakes develop along the walls of the tube and settle at the bottom as small white flakes or balls. In deep agar, colonies are irregular and hard. Freezing and sunshine do not injure the

organisms; drying only slightly. They remain alive for five years. Aerobic actinomycetes sometimes produce pigment; anaërobic strains do not.

Since pus from the discharging lesion is usually contaminated with aerobic saprophytes great difficulty is encountered in purifying the actinomycetes. The strain isolated was cultivated in the following manner: A small amount of the discharged pus was planted into warmed (56 degrees Centigrade) beef heart media previously stratified with sterile vaselin. Another portion of the infected material was placed directly into one per cent glucose veal infusion agar shakes to which one-tenth per cent sterile human blood serum had been added. These tubes were incubated at 37 degrees Centigrade for seven to ten days. Some of them appeared contaminated with staphylococci, but several of the tubes remained clear for the first few days. Gradually white flakes appeared in the beef heart medium along the walls of the tube. During the next three to four days these flakes settled to the bottom in white solid masses. In the deep agar tubes, irregular shaped, cream-colored colonies developed in the depths of the agar. These colonies were removed with the aid of a Pasteur pipette. They were hard and sometimes difficult to remove from the agar. About ten such colonies were picked into fresh beef heart medium. These subcultures did not all develop. However, a good growth was obtained in several of the tubes which, upon microscopical examination and subculturing, appeared to be pure. Aerobic staphylococci were not present.

A vaccine from one of the purified strains was prepared in the following manner: One-tenth per cent sterile human serum was added to one per cent glucose veal broth and stratified with sterile vaselin. The culture was heavily seeded into these tubes and grown at 37 degrees Centigrade. At the end of three weeks the growth which had settled at the bottom of the tube was removed, examined microscopically for purity and placed in a large test tube. The cotton plug was dipped in formalin and reinserted into the tube, which was then sealed with hot parafin to prevent evaporation of the formalin. After the formalin had been allowed to act at 37 degrees Centigrade for seven days, the culture was removed from the incubator, centrifuged and washed twice with sterile salt solution, twice with absolute alcohol, and once with ether. The dried mass was then ground in a sterile mortar; ready to be weighed out in any desired quantity for vaccine treatment.

PATHOGENESIS

The usual form of actinomycosis or "lumpy jaw" begins somewhere about the oral cavity and extends into the subcutaneous tissues. A localized swelling develops which, in a few weeks, fluctuates and discharges a yellowish green pus. The abscess almost invariably points somewhere upon the skin.

In the pus which exudes yellowish particles can be seen which are known as the sulphur granules.

These granules are characteristic of the disease. They vary considerably in consistency from

[†] Cited from Schlegel M. Strahlenpilzkrankheit Aktinomykose Handbuch der pathogenen Mikroorganismen, V, 1927, p. 41.

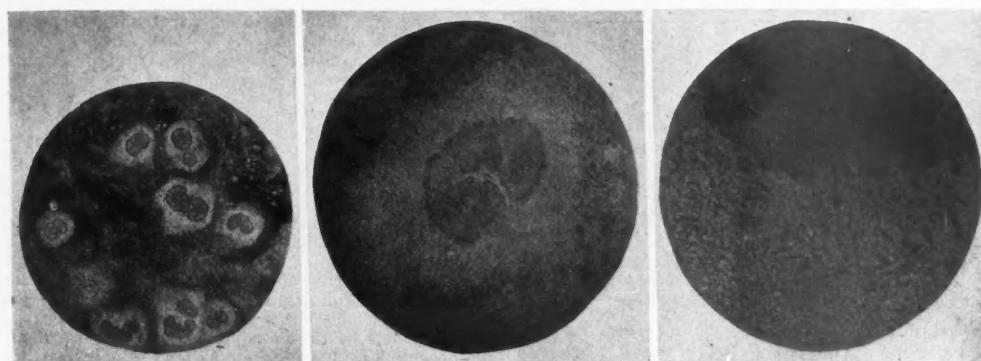


Fig. 1.—Sulphur granules in the pus. Low power.

Fig. 2.—Sulphur granule. High power.

Fig. 3.—club forms.

stony hardness to that of a semisolid fluid. Microscopically the sulphur granule is composed of a central portion made up of closely interwoven myceliae and a periphery of club-shaped forms. (Refer to Figs. 1, 2, and 3.)

Club formation is probably a protective mechanism against the tissue juices. Occasionally particles simulating sulphur granules are seen in discharging sinuses, but they are usually clumps of bacteria.

Sooner or later a second abscess contiguous with the original lesion forms, and during the course of a few months a row of abscesses are present which follow the general direction of the jaw. The lymph nodes are not affected except in the presence of secondary infection. The process rarely metastasizes by way of the lymphatics, but may enter the blood stream causing abscesses in distant parts of the body, such as in the liver or lungs.

The essential pathology consists in a central necrosis of the tissues, a surrounding zone of leukocytes and an outer area of connective tissue. This fibrous layer is ineffectual in preventing the spread of the disease.

CLINICAL COURSE

The course of the disease is slow, lasting from one to three years. Occasionally the infection may clear up very rapidly, that is, in a few weeks, or it may be extremely chronic, lasting as long as fifteen years (Sanford and Voelker). The prognosis depends on the region of the body affected. Colebrook⁶ states that in ten cases of actinomycosis in the face and neck nine were cured and one died; of eight instances of thoracic infection seven died and one was lost sight of; and of six abdominal cases five died and one is well.

TREATMENT

In evaluating any treatment for actinomycosis one must not overlook the fact that certain infections tend to recover spontaneously, particularly those involving the face and neck.

For many years potassium iodid has been considered a specific for the disease. But the drug has proved disappointing in many instances and has frequently failed to check the condition. Even

in very large doses it has had no effect on the course of severe infections. Harbitz and Grondale⁷ showed that potassium iodid up to 2 per cent strength in culture media failed to inhibit the growth of *Actinomyces bovis*. Probably the benefit seen with the iodids is simply from their action in aiding the absorption of inflammatory tissue.

As a result of this loss in confidence in the iodids a multiplicity of remedies have been put forward recently, among them being methylene blue, copper salts, roentgen ray, radium, and arsphenamin. Many cases have been reported in which vaccine therapy, using a specific vaccine of killed actinomycetes fragments, seemed of definite value.

In one of the patients reported here it is of interest to note that the condition did not respond to potassium iodid by mouth, or x-ray therapy combined with surgical drainage of the abscesses, but when the iodid was given intravenously signs of iodism disappeared and the condition improved. Following nonspecific protein therapy, that is, the typhoid, paratyphoid alpha and beta vaccine intravenously, the condition responded quickly with a complete disappearance of all evidence of the disease. There has been no recurrence.

The most effective therapeutic regimen in the type of actinomycosis under discussion probably consists in the use of potassium iodid to tolerance, surgical drainage of the abscesses, small doses of roentgen ray, and the use of foreign protein therapy.

REPORT OF CASES

CASE 1.—W. F., age nineteen, white, male, clerk, reported to the out-patient department of the University of California on July 27, 1927. He was referred with a diagnosis of actinomycosis.

Family History.—Unessential.

Past History.—Lived in California all his life. Clerical work. No contact with cattle. Has occasionally chewed straws. Has had the usual diseases of childhood.

Present Illness.—The present illness dates back to November 1926, when a swelling developed over the region of the left mandible. X-ray of the jaw showed an impacted left lower third molar. This tooth was extracted, but the swelling of the left side of the face persisted. A second x-ray showed no bony pathology. In January 1927 the swelling became fluctuant and,



Fig. 4 (Case 1)
Fig. 5 (Case 2)

upon incision, yellowish green pus was obtained. Examination of the pus showed *Actinomyces bovis*. The patient was placed upon potassium iodid by mouth until he developed severe iodid acne. The abscesses were drained surgically. For several months the treatment was continued without improvement.

Physical Examination.—Negative except for skin condition of left side of face. (Refer to Fig. 4.)

Over the region of the left mandible are several indolent abscesses of a bluish color, fairly deep in the skin and following the general line of the jaw. They vary in length from 2 to 4 centimeters, and all contain yellowish green pus. No enlargement of the neighboring lymph nodes. The oral cavity is entirely negative.

Laboratory Findings.—Blood: Hemoglobin, 90 per cent (Sahli); red blood cells, 5,000,000; white blood cells, 8850; polymorphonuclears, 76 per cent; lymphocytes, 22 per cent; large monocytes, 2 per cent.

Urine: Negative.

Stool: Negative for occult blood and parasites. Blood Wassermann: Negative. Kahn: Negative. X-ray of left mandible shows no pathology.

Examination of pus obtained from abscesses shows the *Actinomyces bovis* as per Figs. 1, 2, and 3.

Biopsy: Chronic inflammatory reaction. Not distinctive.

Culture: Positive for *Actinomyces bovis*.

Clinical Course.—The abscesses were drained repeatedly. Sodium iodid, 20 per cent solution, 10 cc. was given intravenously. From August 3, 1927 to September 29, 1927 he received thirty such injections.

Under this treatment there was very definite improvement, but new abscesses continued to form. On October 17, 1927, the patient entered the University of California Hospital. He received four intravenous

injections of a killed typhoid, paratyphoid alpha and beta vaccine, 75,000,000, 100,000,000, 125,000,000, and 150,000,000 organisms, respectively, at three-day intervals. Following each injection there was a chill and a rise in temperature to 38 to 39 degrees Centigrade. On October 25, 1927, he left the hospital.

In the latter part of January 1928 the patient returned to the out-patient department. He had no evidence of an active infection. There has been no recurrence.

CASE 2.—F. M., age fifty-five, resident of Yreka, California. The patient was sent to San Francisco for diagnosis of an infection of the left side of his face. He presented a row of contiguous marble-sized, indolent abscesses following the general line of the jaw. (Refer to Fig. 5.) Upon incision yellowish green pus was obtained which contained large numbers of sulphur granules. (See Fig. 3.) Microscopically these granules proved to be *Actinomyces bovis*. We did not see the patient again. The data are, therefore, not complete.

COMMENT

Two classical examples of actinomycosis of the jaw are reported. From one case the *Actinomyces bovis* was cultivated and a specific vaccine was prepared. However, the patient was cured by foreign protein therapy, using a killed typhoid, paratyphoid A and B vaccine before the specific vaccine could be employed.

The iodids are helpful in treatment, but are not specific. When not tolerated well by mouth the drug may be given intravenously without disagreeable effects.

Inasmuch as the causative agent of actinomycosis is not found in nature, the theory that the disease is contracted by chewing straws, grasses, etc., is not well founded, and from a clinical standpoint this hypothesis in many cases does not fit the clinical history.

384 Post Street.

REFERENCES

1. Bostrom: Untersuchungen über die Aktinomykose des Menschen, Beitr. z. path. Anat. u. z. allg. Path., 1890, 9, p. 240 (cited by New and Figi).
2. Wright, Homer: The Biology of the Microorganism of Actinomycosis, Journal of Med. Res., 1904.
3. Wolff and Israel: Arch. of Path. Anat. u. Physiol. (Virchow) 1891, cxxvi, ii (cited by Colebrook).
4. Lord: J. A. M. A., 1910, L. v., 1261.
5. Sanford, A. H., and Voelker, M.: Actinomycosis in the United States, Arch. Surg., 11, 1925, 809-841.
6. Colebrook, Leonard: Actinomycosis with Special Reference to Vaccine Therapy, The Lancet, January and June, 1921, 893-899.
7. Harbitz and Grondale: Am. J. of Med. Sci., 1911, ii, 395.

DISCUSSION

GEORGE D. CULVER, M. D. (323 Geary Street, San Francisco).—Epstein and Shoenholz have so clarified their points in their account of two cases of actinomycosis as to leave little for discussion.

The difficulty of arriving at a specific therapeutic procedure in the treatment of any disease is made greater if the disease is as uncommon as the one under consideration. No individual in dermatology sees many instances of actinomycosis. Frequently the patients disappear without giving the physician a good opportunity to conduct a satisfactory course of treatment.

One might object to the authors drawing such positive conclusions from the one successful case which was apparently cured by foreign protein therapy after

extensive use of sodium iodid intravenously. However, it is to be hoped that any such objection would not cause hesitancy in first choosing the foreign protein therapy in a like instance.

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H. J. TEMPLETON, M. D. (3115 Webster Street, Oakland).—The disapproval by the essayists of the theory that actinomycosis is caused by the chewing of straws, etc., illustrates the point that was recently made in the article, "The Perpetuation of Error in Dermatological Teaching," for this theory has been handed down from textbook to textbook.

In view of the reported excellent results in treatment of blastomycosis and coccidioidal granuloma by means of potassium antimony tartrate intravenously, it might be well to try this drug in actinomycosis.

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ROY W. HAMMACK, M. D. (1003 Pacific Mutual Building, Los Angeles).—The study of the organism in this type of granuloma is interesting though often difficult. While in some cases the organism is readily cultivated by proper methods, in others repeated efforts have, in my experiences, failed. The possibility of this type of granuloma being caused by some other organism than *Actinomyces bovis* is borne out by two cases in my experience. One was clinically actinomycosis of the jaw. Granules were found in the pus from the sinuses and these resembled *Actinomyces*. However, the organism could be readily cultivated aerobically, as was repeatedly shown. Its appearance in cultures was different from that of *Actinomyces bovis*, but it was not definitely classified. Another was a granuloma of the abdominal wall with sinuses in which granules appeared. These granules were much larger than typical *Actinomyces* granules and were brown in color. Microscopically they resembled *Actinomyces*, but efforts to cultivate them failed.

The treatment of these infections is always unsatisfactory and tries the patience of both patient and physician. The use of foreign protein therapy is new to me, but since the results in the case reported were so gratifying I believe it is worthy of further trial.

RECONSTRUCTION OF LONG BONES*

By HARLAN SHOEMAKER, M. D.
Los Angeles

DISCUSSION by E. W. Cleary, M. D., San Francisco;
Edgar L. Gilcrest, M. D., San Francisco.

THE fundamental requirement of good orthopedics is perfect equilibrium. When the balance of the body is disturbed through shortening of the long bones of the legs, many compensatory rotations in the pelvis and spine must follow. Reconstruction of a long bone following accident accordingly becomes a matter of great importance to the individual, particularly if that person is within the first three decades of life. A number of factors are involved, and a number of conditions may exist which modify the method of procedure or alter the time of active interference. Multiple fractures, skin abrasions, and shock are chief among these.

I have divided the consideration of the reconstruction of the long bones into the immediate replacement after fracture and the reconstruction of all fractures or malunions.

IMMEDIATE REPLACEMENT

Immediate replacement of the fractured long bone could include that time up to three weeks

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following the injury, as the callus has not sufficiently set to be an obstacle, and the associated injuries to the soft tissues have nearly subsided. Extensive lacerations should delay an active attack upon a bone. An old compound fracture, however, should only be approached nine months after all sinuses have healed and all moisture, however slight, has disappeared.

Avoidance of Shock.—The overcoming of muscle and tendon contractures, rotation, angulation, overriding, nonunion, as well as changes in the blood vessels and nerves, are the principal factors that must be dealt with in order to avoid shock with a possible fatal termination.

Muscle and tendon contracture can best be overcome by flexion of the leg at the knee. Gravity at a time when the bone has solidified will greatly aid subsequent treatment to overcome these contractures, and with less pain and less discomfort than the forcible pressure of casts maintaining a strained though correct anatomical position.

Failure to correct rotation of the femur is inexcusable and frequently ridiculous if it were not so disabling. To see a bowlegged workman attempt to climb a ladder with an inwardly rotated malunited femur which throws the flexed knee into a genu valgum illustrates this point. The underlying factors come generally from setting the foot too straight in the cast with an accompanying outward rotation of the upper fragment of the femur.

Angulation is one of the least disturbing factors in union of the femur, and certainly one of the most frequent. If lateral or anterior, the deformity has been accompanied by rupture of the soft tissues in these directions. If the angulation is posterior or inward, and particularly if near the knee-joint, it must be corrected. Pads, wedges and alteration of the case alignment or braces are all useful methods to combat this complication.

Overriding of the long bones should always be corrected. This is most essential in the young. The tiring effect of a waddling gait extends throughout every joint in the body and is evidenced by the lurch of the torso and head.

Open Reduction.—If skin traction fails to reduce an overlapping fracture within three weeks, or manipulation under the fluoroscope with moderately forced traction fails to engage a bone, then open reduction is justifiable.

RECONSTRUCTION OF MALUNIONS

Nonunions are occasionally met with. They are generally encountered when multiple fractures accompany the injury or where serious compounding has occurred. Lack of cooperation of the patient plays a very small part except possibly as regards irregularities in diet with the tendency to overindulge in carbohydrates, particularly the sugars, and failure to take sufficient vitamins in fresh vegetables, fruits, and fruit juices.

Internal fixation may be produced by a foreign body, grafts or plastic work. When muscle tension, angulation or obliquity of the fracture are

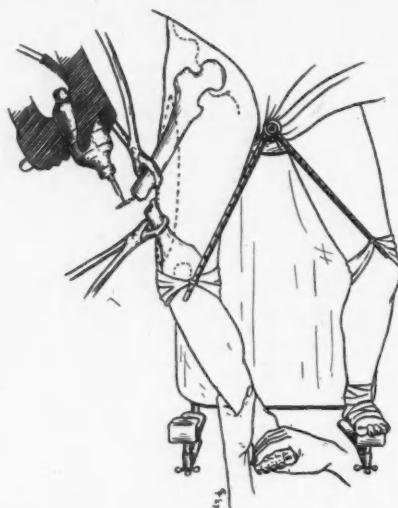


Illustration shows angulation of femur and flexion of the knee to facilitate reduction, without traction on the vessels or nerves. Note absence of traction, the foot being held by an assistant.



Lateral view.

Showing facets cut to secure immobilization of long bone.

encountered, an internal fixation by a foreign body may be acceptable.

A bone graft is a necessity often added to the mechanics of correcting an obvious deformity. A well-cut bone graft will frequently firmly hold a bone and produce the desired permanent union. Exuberant callus occasionally will follow this procedure.

Plastic work on the ends of the severed femur has been most satisfactory in my own practice. The bone should be so cut by the saw or chisel that the roughest shaking will not disengage or alter the alignment. Further fixation is unnecessary and only the soft tissues and skin need be closed with plain zero catgut.

The facets cut upon the bone do not necessarily need to shorten the bone, neither is it necessary that they follow any preconceived plan.

After the soft tissues are closed and dressed, a cast from the opposite knee to the foot on the injured leg is applied. The cast is supported by a truss between the thighs, giving it a shape similar to a capital A with one long leg. The walking Thomas splint is adjusted after the tenth week, regardless of the condition of the union, and then the patient is gotten into an ambulatory condition as soon as the myocardium permits. When

the knee-joint is injured simultaneously with the femur, a brace is adapted into the cast and early passive motion begun on the injured knee.

In the femur there are two safe avenues of approach. My first selection would be beneath the intermuscular septum on the external surface of the thigh. Here neither muscles, nerves or blood vessels interfere with a rapid exposure of the bone.

The second choice is through the intermuscular septum on the inner aspect of the thigh. The incision is carried down to the bone between the adductor longus and magnus internally and the internal head of the quadriceps extensor femoris muscle. The great vessels and the obturator nerve lie to the mesial side of the leg and must not be injured when the bone is exposed. Neither should the extensor quadriceps muscle or anterior femoral nerve be injured if full extension of the leg is to be maintained.

Undue stretching of the blood vessels and nerves is undoubtedly the chief cause of shock and death. *Metatarsalgia* is a condition that may develop in the foot of not so grave a nature to the patient as it is troublesome and prolonged, and which has its origin in the stretched nerve. It may be a terminal reaction from too rough handling or too prolonged or sudden tension upon the sciatic nerve. James B. Mennell, M. D., of St. Thomas' Hospital, says: "No thoughtful worker in the massage department of a military hospital can fail to notice one blot that remains in our treatment of gunshot wounds of bones. The structural repair of the bone itself is, generally speaking, incomparably better now than it was in the early stages of the war. But our patients are likely to return us small thanks, if, while we restore length and form to a femur, we doom them to the curse of a hallux rigidus or metatarsalgia. Almost better is a shortened leg and painless foot than a perfect leg and a foot that will never again carry its owner any distance without pain."

The avoidance of shock during these manipulations is best accomplished by undue traction upon the vessels or nerves. During manipulation of the overlapping bone by a "jackknife" procedure, one assistant holds the leg flexed at the knee and free from tension at all times. The assistant holding the leg can aid the operator materially if it becomes necessary to drag the femur out of its bed in order to cut dovetails into the bone that will hold it fast when set.

With the jackknifing of the ends of the femur and the flexion of the leg at the knee-joint lies the success of a rapid reduction of a fracture without shock.

1930 Wilshire Boulevard.

DISCUSSION

E. W. CLEARY, M. D. (177 Post Street, San Francisco).—Doctor Shoemaker's paper is timely. We cannot have too much discussion of this important subject. As the World War experience recedes, one notes a tendency to forget some of its dearly bought lessons.

In the dregs of the great battlefields men saw this reconstruction problem as they had not seen it before.

A hundred, five hundred, a thousand maimed men seen en masse forcibly demanded the elimination of carelessness and mishandling and the institution of better methods and higher standards.

Splint standardization, immobilization at the earliest practical moment, skeletal traction, traction-suspension in frames of the Balkan type prevented countless deformities and saved hundreds of lives.

These methods were widely applied to industrial injuries after the war, and with similar good results. Then began an insidious, but no less dangerous drift back toward obsolete prewar methods. The human wreckage of civil industry is not disclosed en masse as was the human wreckage of war. The newer and better methods are a far greater tax upon the time and ability of the surgeon. Their application usually costs more in primary and obvious expense than do perfunctory and obsolete methods. The salvage value of high standard reconstruction surgery is often obscured when the price of life and limb is set as low as present custom tends to place it in industrial workers.

Doctor Shoemaker has clearly pointed out that shortening, angulation, malunion and stiff joints must be avoided. He has warned us against shock and hemorrhage, and has stressed the value of efficient early manipulative reduction. One could wish that space had permitted him to speak in some detail of modern methods of splinting, skeletal traction and suspension which, if efficiently applied, go so far toward avoiding disasters and toward facilitating reconstruction of fractured long bones.

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EDGAR L. GILCREEST, M. D. (384 Post Street, San Francisco).—I wish Doctor Shoemaker might have emphasized more the importance of immediate replacement after fracture. Under this caption he arbitrarily includes that time from the day of injury up to three weeks. I believe that we should urge more and more very early reduction. In fact, I believe that we should teach our students that a fracture is an acute emergency. It is an erroneous and pernicious idea that one should wait until the swelling subsides before attempting reduction. Immediate or very early reduction often prevents much swelling. Repair does not go on indefinitely; sooner or later it ceases; therefore it must be conserved and not wasted.

In accomplishing these reductions Doctor Shoemaker has pointed out how to avoid shock. This should always be borne in mind. Frequently in fracture cases too little attention is paid to the trauma of the surrounding tissues. There is no simple fracture. Every fracture is accompanied by varying degrees of contusion and laceration and of hemorrhage into the adjacent structures.

The cause of unsatisfactory results in reconstruction of the long bones is that too little attention is still given to the consideration of the anatomy and physiology of the part. Since the popularization of the treatment of fractures by extension, exact reduction of the fracture has often been neglected. It is folly to sacrifice the attempt at primary reduction for other methods. Until good reposition has been obtained we should not be satisfied. I have in some cases made three or four attempts before proper reduction and alignment have been secured. As Doctor Shoemaker has so ably pointed out there are a number of fractures which do not permit primary reduction. These lie on the border line between fractures requiring conservative or nonoperative treatment and those requiring operative intervention. The methods pointed out by Doctor Shoemaker have been our allies for years. We should more frequently hesitate to leave the fields of tried and proved experience to go romping after the butterflies of untried methods in our desire for the new and more spectacular. Rather we should perfect ourselves in standardized methods.

SMALLPOX AND VACCINATION*

By FREDERICK EBERSON, M. D.
San Francisco

Discussion by J. L. Pomeroy, M. D., Los Angeles;
Walter M. Dickie, M. D., San Francisco.

MODE OF TRANSMISSION

SMALLPOX is a disease that spares no class of people. Its extent cannot be compared with that of typhoid fever, cholera, typhus fever, or tuberculosis, the prevalence of which is effectively lessened by improved methods of sanitation, for the exact mode by which smallpox is conveyed is not definitely understood. No one as yet has discovered the organism or other agent that may be responsible for the disease. For that matter, nobody knows what electricity is, but who cares to play with a live wire? However, it is commonly believed that the infective substance, or virus, as it is called, enters the nose or throat and from these places, through a local injury, enters the blood and causes a general infection of the system. There does not seem to be any doubt that the smallpox virus is contained in the lesions of the skin because direct contact is certain to spread the disease to other persons.

AN ANCIENT AND MODERN SCOURGE

Smallpox was at one time much more common and far more deadly in its ravages than it is now. There are two reasons for this fact. First, a new disease invariably wipes out the population whenever it finds a virgin soil. The scourge travels along like flames that lick dry timber in a burning forest. Second, methods of prevention and treatment of the disease are known today that were unknown in the past.

Introduced into the New World by the Spaniards about fifteen years after the discovery of America, within a short time smallpox had claimed about three and a half million persons in Mexico. More than one-half of the twelve million American Indians were stricken. Later, in the year 1707, almost 40 per cent of the total population of Iceland perished to the number of twenty thousand.

In more recent times, during the years 1893 to 1897, almost four hundred thousand persons died of the disease in sixteen countries and of this number Russia alone lost over 275,000. For many years China had been swept by smallpox and enormous populations wiped out, but today the disease is no longer so deadly, since the pock-marked and disfigured faces of the natives bear witness to the fact that nearly everyone has had the disease and is therefore now immune to another attack. All the previous waste of human life seems the more terrible in view of the simple preventive measure given to us by modern science.

DISCOVERY OF VACCINATION

The prevention of smallpox depends chiefly upon vaccination. It was one of the first weapons

* From the Department of Medicine, University of California Medical School.

* Radio lecture, KFRC, November 5, 1928, sponsored by the University of California Medical School.

given to man in his fight against disease and is therefore of unusual historical interest. Vaccination by the use of material taken from actual cases of smallpox was known to ancient China, whence the Turks introduced the custom into their own country. One might almost say that taking smallpox as a precaution against the disease became in Turkey a form of diversion as pleasant as the waters of health baths in other countries.

Lady Mary Montague.—Early in the eighteenth century Lady Mary Montague, who was living in Turkey, wrote home to England about this practice and had her daughter vaccinated. The idea spread and vaccination soon became popular in Great Britain. Of course this method had its obvious dangers and disadvantages, but it was not until seventy-five years later that science found a better way.

Edward Jenner.—The world gives credit in modern times to Dr. Edward Jenner of England for this wonderful discovery, evolved after careful scientific and logical methods of experiment. He demonstrated the mechanism whereby cowpox, a disease of the cow, can be transferred to humans and the mild form of infection thus produced is in turn capable of warding off the serious smallpox which is a human disease. Despite vigorous opposition on the part of those who take pleasure in obstructing new ideas, he succeeded in winning governmental support and numerous adherents, thus making it possible for him to put his discovery to a thorough practical test.

The first human being to be vaccinated by Jenner was his own eighteen months old son, an evidence of implicit faith in his own discovery. It was in the same year, 1796, that this young country doctor transferred the cowpox material from the hands of a dairymaid to an eight-year-old boy, who, when subsequently inoculated with virulent material taken from a smallpox pustule, remained well. Thus vaccination came to be known as such from the Latin word "vacca" for cow. How this idea of vaccination developed in Jenner's mind is of some interest.

Simon Jesty.—It was a tradition of the countryside that cowpox protected against smallpox. Persons that did the milking on the farms often contracted the disease from the cow's udders and developed pustules on the hands and arms. These persons were considered lucky because the village folk always said, "If you've had cowpox you can't catch smallpox." This thought was so strongly ingrained that a farmer of Devonshire named Simon Jesty determined to give cowpox to his wife and sons as a protection against smallpox. This was in 1774, twenty-four years before the publication of Jenner's work.

Jenner supposedly knew nothing of Jesty's experiment, but was familiar with the general tradition regarding smallpox and cowpox. A simple country practitioner, Jenner, after settling down to the humdrum life at Berkeley, where he lived, devoted his attention to the study of this terrible disease that had carried off all but one thousand of a population of fifteen thousand persons in a nearby town only a few years before. As is usu-

ally the case, Jenner was not honored in his own country until the outside world had already recognized his achievements, and it was not until 1802 that the British Parliament voted him \$40,000 in appreciation of his discovery, and in 1806 voted him a further grant of \$100,000.

In passing, one is tempted to call attention to the munificence of these grants, in contrast to the indifference of the American Congress to Reed and his co-martyrs, who, through their discoveries, relieved the Western Hemisphere of the yellow fever peril.

BENEFITS OF VACCINATION

What is the use of vaccination, some may ask? There has always been a prejudice against this procedure because of general lack of knowledge concerning the great benefits to be derived from the simple preventive measure. Vaccination confers an immunity or resistance to the smallpox virus. Within eight or nine days this immunity develops in the body and is retained thereafter for a period of about seven years, after which the individual loses this resistance and becomes again susceptible to the disease, even though the disease under such conditions usually attacks the human host in much milder form. The protection insured by vaccination may be made continuous and more certain by taking the treatment every five years.

The idea of vaccination is simple and devoid of mystery. Does it not seem reasonable to imitate with a mild and harmless form of disease a bodily condition that will normally result only if one has been lucky enough to survive a dangerous infection? For it is only when we recover from smallpox that we are guaranteed freedom from other attacks. Why should one take the risk of succumbing to a horrible disease in order to profit by the immunity that recovery confers when it is possible to win such immunity by artificial means without danger and without disfigurement?

The risk attending vaccination has been grossly exaggerated by antivaccinationists and their supporters. Vaccination is not dangerous. Cleanliness prevents any complications, and the danger from the vaccine itself is a bugaboo that misinformed medical quacks have set up to frighten the public. The methods of vaccination in use today are certain and safe, and even a sore arm is a rare occurrence if the site of inoculation is kept clean and the arm rested from unduly severe movements. The benefits to be derived from vaccination are so great that any possible danger, even if it did exist, would be well compensated.

VACCINATION AND THE COMMUNITY

Vaccination gives the individual protection against smallpox and at the same time affords an almost perfect protection to the community. To remain unvaccinated is to deprive the community of the protection due it. In countries where vaccination is compulsory the number of cases of smallpox and deaths from the disease have been remarkably low as compared with those countries

where vaccination is neither compulsory nor practiced voluntarily to any extent.

STATISTICS

One might give endless lists of figures showing plainly what vaccination has done to prevent disease and death.

Germany.—In Germany since 1874, when vaccination and revaccination were made compulsory by law, there had been only two deaths from smallpox in the huge German Army up to the year 1916. From the years 1901 to 1910 in Germany there were only 380 deaths from smallpox, and during the same period in England and Wales, with a population half the size of Germany's, there were 4300 deaths. More recent figures show that Germany, resuming her vaccination campaign after the Great War, reduced the number of smallpox cases from 688 in the year 1921, to 215 in 1922, and to 17 in 1923.

Other Countries.—If we compare conditions in certain countries during the period of 1886 to 1889, when smallpox was extremely prevalent, we find in Austria 11,000 deaths, in Italy 16,000, in Spain 11,000, and in Russia 21,000. Scotland at this time, with compulsory vaccination, had only twelve deaths or one in about 325,000 persons, and in 1923 only three cases were reported.

Soviet Russia.—Today Soviet Russia has less smallpox than the United States! In 1919, when vaccination became compulsory, there were 169,500 cases of smallpox, two years later 68,500 cases, and after the fifth year, 31,000 cases.

Hawaii.—Hawaii, with compulsory vaccination and despite its situation at the crossroads of the East, has had but fourteen cases of smallpox in the past eleven years.

Boston.—In our own country we have ample evidence of a similar kind to show how vaccination prevents smallpox and lessens mortality. Boston had a serious epidemic in 1872 with 3722 cases of smallpox and 1040 deaths. Two years later compulsory vaccination of children entering school was enforced and smallpox became so rare that the majority of physicians now living in Boston have never seen a case.

New York State and New York City.—The best example of what vaccination will do is found in New York State. In 1923, among 7,200,000 persons living in the crowded districts where children must be vaccinated before entering school, there were 668 cases of smallpox. Among 3,185,000 persons living in the small towns and rural districts where laws for compulsory vaccination did not exist, the number of cases was 3080, or more than twelve times as many per capita of population. Incidentally, in New York City there has not been a death from smallpox for the past fourteen years.

EFFECTS OF NEGLECT

Kansas City.—Let us now consider the other side of the picture. Only a few years ago, in Kansas City, where vaccination was not practiced

because certain antivaccination societies had exerted a powerful and baneful influence, an epidemic of smallpox occurred and virtually every case had a fatal result. The explanation is simple. The disease had never been common in that locality. There was no natural immunity due to recovery from the disease, nor had artificial immunity been obtained through vaccination. The disease, therefore, found a new and virgin territory with highly susceptible people and the consequence was a high mortality. This might have been avoided had the parents listened to reason and common sense and not paid so much attention to prejudiced antivaccination propagandists.

Philippine Islands.—Before the Americans occupied the Philippine Islands, toward the close of the last century, the known deaths from smallpox ranged from forty to fifty thousand a year. Following a vaccination campaign, the death rate was reduced to between seven and eight hundred a year. These deaths usually occurred among babies and could generally be traced to the neglect of native municipal officers. This was sufficient proof of the value of vaccination, but in 1918 an epidemic of smallpox broke out with 47,000 cases and 16,000 deaths. In Manila, the capital of the Islands, more than 60 per cent of the population were stricken.

The objectors to vaccination thought they had damning proof against it, but an investigation revealed the true situation. It was found that the American health officers had for some years been replaced by native officers who were guilty of neglect. They threw away the vaccine viruses and made false reports on the number of cases vaccinated. In one instance the report of an ambitious native officer showed that he had vaccinated fifty thousand more people than the whole population of the province! Further investigation made the case for vaccination much stronger because 93 per cent of the people that died had never been vaccinated and 90 per cent of the cases occurred in children that had been born since the natives took over the duties of vaccination. When the results of the investigation became known, the Americans started another health campaign and smallpox has since been a rare disease in the Philippines.

California.—The situation in California should not give us cause to advertise what has been taking place. At one time there was a law in California requiring vaccination of children before they could attend school, but in 1911 the anti-vaccinationists succeeded in having the law changed so as to permit conscientious objection. As a result, 80 per cent of the children in some communities are unvaccinated. In 1923 this law had all its teeth pulled and the people of California, as Doctor Kellogg of the University of California has said, were given the privilege of enjoying all the smallpox they wanted.

Because of this laxity, smallpox in California is becoming alarmingly prevalent among children. Figures from the State Board of Health show that from 1912 to 1916 the cases of smallpox in California averaged 511 a year, from 1917 to

1921, 2683, and from 1921 to 1926, 4263 a year. The average annual deaths in the same periods were 9.4, 9.8, and 74. In 1924 there were 56 deaths among 10,000 cases. In 1926 there were 236 deaths among 2700 cases. In 1927 there were 984 cases with five deaths and for nine months of this year 911 cases with one death.

Great Britain.—Similarly in Great Britain we see the effects of such laws as exist in California. In keeping with the results of conscientious objection to vaccination in Great Britain, smallpox has increased tenfold between the years 1917 and 1924 as compared with the years 1910 to 1917. There were 847 cases in the first period and 8251 in the second.

DANGER IN DELAY

The horrors of smallpox with its terrible pustules covering the body, the puffy eyes closed by festering masses, the blindness that frequently results, the permanent disfigurement when death does not occur—all these things are too well known to require further comment. The appeal to common sense is all that should be necessary. Vaccination against smallpox is the best safeguard for your children, yourselves, and the community. Very often parents are simply careless and negligent and put off vaccination from day to day. It may be too late. Delay is dangerous. Children should be vaccinated early; the vaccination should not be postponed until the children are ready to enter the schools.

It is essential that little or no heed be given by parents to the advice of neighbors on medical subjects. There are physicians who are better qualified to give advice. Any doctor, however, who tells you that vaccination is unnecessary or dangerous, might be termed hopelessly behind the times and is in the unfortunate position where he is unable to present reliable and scientific facts to warrant such an opinion. Up-to-date scientific medicine teaches prevention, and prevention is as important as cure. In few diseases is this more true than with that dread and disfiguring scourge, known as smallpox.

University of California Medical School.

DISCUSSION

J. L. POMEROY, M. D. (330 North Broadway, Los Angeles).—It is true that the people of California are subject to constant danger from smallpox. It is a question of considerable moment, however, as to what can be done about it. Personally I believe that compulsory methods are not possible to secure in this state. As a result we must fall back on a constant educational campaign. In this respect the medical profession itself is not doing very much. If every physician in the State of California would urge vaccination on all of his clientele and especially the newborn children before the end of their first year, we should scarcely need to worry about the situation. The conscientious objector would be about the only person susceptible and would get his due reward. The facts are, however, that very few physicians are really practicing preventive medicine and even during an epidemic many of the physicians object to the whole-

sale vaccination carried out as an emergency measure by the health departments.

Such papers as this should serve as a reminder to the medical profession in general to do everything possible in their own field and toward the education of those susceptible of education and let nature take care of the rest.

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WALTER M. DICKIE, M. D. (State Building, San Francisco).—It is true that more cases of virulent smallpox have been found in California since the repeal of the Vaccination Act, but it is believed that this is due to the importation of virulent strains from Mexico and the Orient as well as to the decreased number of immunized individuals within the state. Vaccination against smallpox is the oldest efficient weapon in preventive medicine, and its virtues are as well known and have been preached as consistently as have those of any other procedure in public health administration. It would seem that vaccination is available for all who may desire to take advantage of the safeguard that it provides. Parents and physicians have definite responsibilities in making certain that their children and patients, respectively, are vaccinated successfully. Health authorities have the undoubted right to take drastic action in the control of epidemics of smallpox, but when epidemics are not present the responsibility for securing protection against this disease rests upon the individuals concerned far more heavily than it does upon health officials.

THE UNTOWARD EFFECTS OF PROTEIN THERAPY IN OPHTHALMIC PRACTICE*

By M. N. BEIGELMAN, M. D.
Los Angeles

DISCUSSION by Otto Barkan, M. D., San Francisco; George Pines, M. D., Los Angeles; A. Ray Irvine, M. D., Los Angeles.

Primum sit non nocere.

HARDLY any other therapeutic method has attracted as much attention in the last decade as the nonspecific protein injections or the so-called "milk" therapy. The undoubtedly beneficial results of this treatment in various fields of medicine and the theoretic importance of the subject in regard to modern immunology stimulated a great deal of work—clinical, as well as experimental. Still a number of problems concerning the action of proteins, the dosage, the intervals, the indications and contraindications remain unsettled.

The object of this paper is to present certain facts and considerations in regard to one of these problems—the untoward effects of protein therapy and the methods of their prevention.

The voluminous literature on the use of foreign proteins in ophthalmic practice presents a striking variety in the complications arising from protein treatment. While some authors report large series of cases without mentioning a single untoward occurrence, others stress serious general

* Read before the Eye, Ear, Nose, and Throat Section of the California Medical Association at its Fifty-Seventh Annual Session, April 30 to May 3, 1928.

or focal reactions and advocate the necessity of certain precautions. The difference of opinion is due not only to the selection of cases, to the variations in the chemical composition of the proteins used or to the mode of injection, but also to the degree of thoroughness and of critical attitude in the work done by various authors.

My personal experience with protein therapy in eye diseases extends over a period of eight years. On the Continent, shortly after Müller's announcement, the milk injections had been taken up by the Eye Hospital of the University of Don and were conducted on a rather large experimental scale, so that in 1920 fifteen hundred cases had already been reported by Doctor Askinasi.² The work with proteins I did in this hospital in the years 1920, 1921, and 1922. I continued later in the University of Kieff, as well as during the last three years of my private and clinic work in Los Angeles.

For the sake of convenience, complications in the use of protein injections will be discussed under three headings: local, at the site of the injection; general or systemic; and focal, at the site of the eye lesion. It will be proved later that there is an intimate relationship between the last two groups.

Local.—The *local reaction* in the form of infiltrations, abscesses or hematomata are of the same nature as in other intramuscular injections and are usually the result of a faulty technique. Strict asepsis and avoidance of areas of large blood vessels will completely eliminate these unpleasant occurrences.

General.—Much more serious are the *general reactions* which at times follow the parenteral use of proteins. The immediate toxic effect of a protein injection resulting in a temporary dyspnea or in a sudden fall of blood pressure, very rarely reaches an alarming height. In the unfortunate experience of Darier³ a severe respiratory and cardiovascular depression followed an intramuscular injection of milk in the treatment of a hypopyon-keratitis, and the patient died twenty hours after the injection. The extreme rarity of these instances makes them rather accidental, and any conclusion as to their cause or prevention is hardly justifiable.

The possibility of true anaphylaxis which is well known in the use of horse serum has been disputed by many authors in regard to milk, caseosan, and similar products. Zill,⁴ Zimmer,⁵ Rolly,⁶ and others presented large series of cases treated by various proteins without a single anaphylactic reaction. On the other hand, not only have Uhlenhut and Weichard⁷ produced anaphylactic phenomena in animals by reinjecting milk and caseosan, but there is ample clinical evidence of a similar character. Ziermann,⁸ Randenborg,⁹ Jocq,¹⁰ Darier,¹¹ and particularly Büttner¹² in his work on "Anaphylaxis in Protein Therapy," reported numerous occasions on which "protein"

injections, well tolerated at first, were followed by anaphylactic reactions when repeated after the elapse of an incubation period.

The following case report illustrates the types of reaction which must be considered as anaphylactic:

A patient with a gonorrhreal iritis who gave a history of "vaccine" treatments in the past, developed an urticaria following an intramuscular injection of five cubic centimeters of milk. Three months later there was a relapse of the iritis. This time, since the patient was obviously in a hypersensitive state, the desensitization method of Besredka was used, and one-fourth cubic centimeter of aolan was given intramuscularly an hour before the full dose (ten cubic centimeters). A few minutes after the injection of the full dose the patient became cyanotic, breathed with difficulty, and presented in general a picture of extreme anxiety and depression. This condition gradually subsided after lasting nearly an hour.

One can see from the details of the case that the desensitization by Besredka's method is by no means complete, and Weil's warning in regard to the difference between laboratory experiments and clinical medicine stands true.

On the other hand the reported case was the only one in our experience, when Besredka's desensitization method failed. Since the protein therapy does not prevent recurrence of the diseased condition we had many occasions to use milk injections at more or less long intervals, and we find the preliminary introduction of a small dose of protein affords a reasonable degree of safety. Whether any desensitization method should be used at all must be decided, in our opinion, in every individual case on the basis of the allergic history. We do not feel that the danger of anaphylaxis in protein therapy is frequent and serious enough to justify "sensitization" tests in each case, as advocated by Benedict¹³ of the Mayo Clinic.

In combating anaphylactic shock, adrenalin remains the treatment of choice, its efficiency being due to a prompt rise of blood pressure, to a relaxation of the bronchial muscles, and to a delay in absorption.

Focal.—Proteins introduced parenterally call forth not only specific but also a number of non-specific alterations in the reactivity of the body, and the consequences of these changes are not always beneficial to the focal lesion.

It is the belief of the majority of investigators that protein therapy works largely through the stimulation of body cells, and that it is essentially what German authors call "reiztherapie" (irritation therapy). But any stimulation can be effective only when a certain amount of potential healing power is present in the diseased body. If a system is exhausted by disease, age, or malnutrition to such a degree that no active response is possible, then stimuli are liable to do harm rather than good.

This point, which is emphasized by Petersen¹⁴ and Wick,¹⁵ is well supported by observations we

have made in the treatment of keratomalacia during the famine in eastern Europe in the early part of this decade. The corneal degeneration in patients exhausted from starvation was undoubtedly progressing from bad to worse under milk injections. Every one of these injections, which, by the way, did not produce any appreciable general reaction, was followed by prompt destruction of the cornea.

Another danger of focal disturbances induced by milk injections exists in the treatment of corneal herpes. In a case of a quiescent herpetic keratitis, where I injected aolan expecting it to relieve a persistent photophobia, a sudden flare-up of the herpes followed. A case similar to this has been published by Velhagen, Jr.,¹⁶ in 1926; Le Roux,¹⁷ Morax,¹⁸ and others have long ago observed the recurrence of herpes caused by typhus vaccination, and as a whole the provocation of herpes relapses by protein injections stands in modern immunology as a well-established fact (Doerr).¹⁹ The exact explanation of this interesting fact requires a more definite understanding of the pathogenesis of herpes than the one we possess at present. It seems that the unusual interest displayed in the last few years by research workers in regard to herpes has rather complicated matters, since the results of the investigations are widely varying and the conclusions are often contradictory. Best founded is the opinion of Bastai and Busacca,²⁰ that protein injections can mobilize the herpes virus, which has remained latent in the blood, and precipitate a relapse in the sensitized area.

The larger field for future study is the character of the usual histological changes taking place in the diseased foci immediately following protein injections. From what has been done along this line we know that the focal reaction is of the same diphasic type as the general reaction. The first phase is an exacerbation of the process with increased congestion and exudation; the second phase, a decrease of the inflammatory signs. Schmidt correctly compares the process with a pendulum which, when brought out of its equilibrium, swings first in one and then in the opposite direction.

The first period in the focal reaction is of short duration and is therefore usually overlooked when the patient is seen at an interval of one or two days.

Tobias²¹ who, on a series of eye cases, did the painstaking work of early and repeated examinations, after protein injections, described these focal changes in detail. The increase of infiltration area in corneal lesions or of the exudate in a plastic iritis, preceding the second phase of clinical improvement, stand out clearly. In the light of these observations the possibility of certain dangers is evident. When a corneal ulceration has progressed until there is little tissue left at the bottom of the ulcer, the first phase of the focal reaction is likely to facilitate the perfora-

tion with its disastrous results. Holler²² was probably right when he complained that in deep corneal ulcers milk injections precipitated the perforation.

As to the uvea, the untoward effects of proteins have been recently mentioned in a general way by Benedict, who states that "a chronic iritis with a narrow pupil and posterior adhesions can be made worse by injections of proteins." I met with two attacks of secondary glaucoma following the use of protein in a uveitis. In both cases an increased intra-ocular tension pre-existed and was probably made worse by the first phase of the focal reaction—the increased exudation.

May I state, in conclusion, that the facts and considerations I have presented today do not tend to discredit the value of protein injections. On the contrary, a clearer understanding of the possible dangers and contraindications to its use will add to the safety and to the wider application of this valuable therapeutic method.

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REFERENCES

1. Müller, L., and Thaner, C.: Med. Klin., 1916, Vol. xii, p. 1120.
2. Askinasi, A.: Lactotherapy, 1922 (Russian).
3. Darier, A.: La Clin. Ophth., 1924, Vol. xiii, p. 72.
4. Zill: Munch. Med. W., 1921, 26.
5. Zimmer: Ther. d. Gegenu., 1920, 18.
6. Rolly: Munch. Med. W., 1921, 27.
7. Weichard and Shrader: Munch. Med. W., 1919.
8. Ziemann: Berl. Klin., 1921, 50.
9. Randenborg: Ztrblatt f. Gyn., 1920.
10. Jocqs, R.: La Clin. Ophth., 1925, p. 65.
11. Darier, A.: La Clin. Ophth., 1921, p. 607.
12. Büttner, K. D.: Med. W., 1922, 1070.
13. Benedict, W. L.: Minnesota Medicine, 1928, April, p. 203.
14. Petersen: Protein Therapy and Nonspecific Resistance, 1922.
15. Wick, W.: Klin. Mon. f. Aug., 1926, Vol. lxxvii, p. 487.
16. Velhagen, K.: Klin. Mon. f. Aug., 1926, Vol. lxxvi, p. 355.
17. Le Roux, H.: Arch. d'Oft., 1921, Vol. xxxviii, p. 112.
18. Morax, V.: Ann. D'OC., 1916, p. 202.
19. Doerr, R.: Ztrblatt f. O., 1925, Vols. xiv and xv, pp. 705 and 833.
20. Bastai and Busacca: Klin. W., 1924, p. 146.
21. Tobias, G.: Kl. Wochenschr. ft., 1922, Vol. xi, p. 515.
22. Holler: Ztschr. f. Aug., Vol. xliv, p. 145.

DISCUSSION

OTTO BARKAN, M. D. (490 Post Street, San Francisco).—Doctor Beigelman has covered the subject in such a concise manner that but little remains to be said. One might add that hemoptysis and hematemesis have been reported following milk injections. We have observed one such alarming case, although this

may have been a coincidental hemorrhage from an esophageal varix and not from the milk injection.

This paper reminds us to bear in mind the potential dangers of protein therapy, and that its administration must be accompanied by due care and judgment.

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GEORGE PINES, M. D. (1136 West Sixth Street, Los Angeles).—Doctor Beigelman has discussed the subject in a very conservative and careful manner. His discussion of the complications that may attend the use of milk therapy is thorough with the exception that he fails to discuss or impress the fact that severe anaphylactic shock or even death may follow its use in individuals sensitive to milk. I would suggest that every individual treated by this form of therapy be first tested to milk, particularly those who give a history of having had some form of allergic disease or a family history of the same. The cases reported by the author in which untoward symptoms occurred could have been avoided if the above suggestions had been followed; and the use of adrenalin when it does occur would also prevent severe shock and possible death.

The subject, on the whole, is covered very thoroughly insofar as the treatment of eye conditions is concerned and, no doubt, is of great value, but the author fails to mention the fact of its possible value in other conditions such as arthritis and asthma.

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A. RAY IRVINE, M. D. (1142 Roosevelt Building, Los Angeles).—The great value of this type of therapy in ophthalmic practice is the fact that at the site of the lesion, the eye, we get a focal reaction after injection of foreign protein. If, due to any cause, there is a great general depression following foreign protein injection, is it not reasonable to believe there would be a lessened resistance at the site of the focal condition? Another danger which should be stressed is that the first phase of reaction due to an injection may accentuate the disease process at the site of the focal infection, as was shown in cases of keratomalacia, deep keratitis, and certain forms of uveitis, brought to our attention by Benedict. In my own experience a deep gonorrhreal corneal ulcer promptly perforated after a milk injection.

The study of allergic conditions, the desensitization of patients, and the careful selection of patients upon whom to use foreign proteins will pretty well safeguard us from untoward complications.

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DOCTOR BEIGELMAN (Closing).—Anaphylactic complications in the course of protein treatments are comparatively rare. It is possible indeed to perform hundreds of milk injections and not to encounter a single instance of true anaphylaxis. The allergic complications, when they do occur, are usually of a mild type and can be traced back to some kind of hypersensitivity in the past. It seems that under these circumstances sensitization tests are hardly justified as a general requirement of protein therapy, and that they are indicated only in the presence of a positive allergic history. However, the final word in this matter can be left to the allergist who, through his special knowledge and experience in the parenteral use of proteins, is best equipped for the handling of non-specific agents.

I feel, with Doctor Irvine, that the field where the ophthalmologist is called upon to do his share of scientific observation is the focal reactions—at the site of the eye lesion. We must remember that we are still in the experimental stage of the nonspecific therapy, and that only a careful registration of both the beneficial and the untoward effects of it will help to establish the proper indications and contraindications.

SPONTANEOUS HEMATOMA OF THE ABDOMINAL WALL IN WOMEN*

REPORT OF CASES

By ALICE F. MAXWELL, M. D.

San Francisco

DISCUSSION by L. A. Emge, M. D., San Francisco; William B. Thompson, M. D., Los Angeles.

HEMATOMA of the abdominal wall may result from trauma or may occur spontaneously. The former is relatively frequent and the etiologic factor is usually apparent. The infrequency of spontaneous rupture of the blood vessels of the abdominal wall, the severity of the attendant symptoms, and the difficulties of diagnosis, justify the recording of the following case:

Mrs. R., aet. 35, was admitted to the obstetrical department of the University of California Hospital in the sixth month of her seventh pregnancy complaining of acute abdominal pain. The patient had had a severe cold for about one week. During a paroxysm of coughing while sitting on a couch, she felt a sudden sharp tearing pain in the lower left abdomen and an exquisitely tender swelling soon appeared and steadily increased in size. The patient was brought to the hospital in an ambulance within two hours after the onset of the attack. Examination showed a well-developed woman in acute abdominal distress: temperature, 37; pulse, 100; respiration, 24. The heart was negative; the lungs showed normal resonance but with diffuse scattered râles. There was no evidence of arterial sclerosis. The abdomen on the left side from Poupart's ligament to the level of the umbilicus was distended by a tumor which was board-like to palpation and extremely tender. The fundus of the uterus reached to the umbilicus and appeared to be pushed over to the right side of the abdomen. The uterine body could not be outlined on the left side because of the tenderness and resistance of the overlying tumor. Vaginal examination revealed no pathology, and there was no external bleeding. The fetal heart could not be heard. The preoperative diagnosis rested between a twisted ovarian cyst with hemorrhage or concealed hemorrhage from premature separation of the placenta. During the next three-fourths of an hour, while the operating room was being prepared, the mass on the left side steadily increased in size. Under nitrous oxid anesthesia the abdomen was opened by a midline incision. The skin and subcutaneous tissue were not discolored. When the left rectus sheath was incised, several handfuls of blood clots gushed out of the opening and a hematoma reaching from the level of the bladder almost to the rib margin and about eight centimeters to the left of the midline was found. The muscle fibers were ragged and split throughout their entire extent. The underlying peritoneum was ecchymotic, bulged into the abdominal cavity, was very friable and tore readily. Exploration of the peritoneal cavity was negative. The blood clots were removed, several oozing areas in the lower part of the left rectus were ligated; but the ruptured ends of the blood vessel could not be found. The abdomen was closed in layers and a small rubber drain was inserted. The convalescence was complicated by a flare-up of the respiratory infection and signs of pneumonia. The cough was controlled by morphin, and the abdominal wall was tightly bandaged. The woman was dis-

* Read before the Obstetrics and Gynecology Section of the California Medical Association at its Fifty-Seventh Annual Session, April 30 to May 3, 1928.

charged as well within three weeks. The pregnancy went to term and she was delivered of a normal child four months later.

CASES IN THE LITERATURE, OF SPONTANEOUS HEMATOMA OF THE ABDOMINAL WALL

A review of the literature shows that spontaneous hematomata of the abdominal wall during pregnancy are rare. I can find only ten cases.

CASE 1.—A woman, aet. 30, in the eighth month of pregnancy. Past history was negative. While in bed for severe cold, she experienced a sudden sharp pain in the right lower quadrant. Abdominal examination revealed a large tender mass in the right flank separate from the uterus; temperature, 101; pulse, 135; respiration, 30 to 36. Cough and dyspnea severe. The urine showed albumin and casts, and the patient appeared very ill. A diagnosis of hydronephrosis was made. The woman fell into premature labor within a few hours. Following delivery the tumor in the right flank was interpreted as an ovarian cyst with inflammatory reaction. Operation one week later showed a hematoma behind the right rectus muscle extending up to the rib margin. Recovery.

CASE 2.—Para 3, aet. 30, in the sixth month of pregnancy, had had bronchitis with severe cough for several weeks and had noticed a dull pain in the right lower quadrant for three weeks which suddenly became very severe. A tender resistance developed in the right lower quadrant; twenty-four hours later, symptoms of ileus and marked anemia were present. A diagnosis of ruptured uterus was made. At operation a cavity seven inches long filled with coagulated blood was found in the right rectus muscle; the peritoneum had ruptured and there was considerable free blood in the abdominal cavity. This is the only case in which the hematoma had broken through into the peritoneal cavity.

CASE 3.—A woman five months pregnant complained of general abdominal pain which, after three days, localized in the right side and back. Paroxysms of vomiting and frequent micturition occurred at intervals and lasted for three or four hours. A tender tumor, independent of the uterus, was palpated in the right flank. The urine showed albumin and casts. Hydronephrosis was suspected, but cystoscopic examination of the bladder and ureters was negative. At operation a large hematoma was discovered in the extraperitoneal connective tissue which had dissected up to the right flank. Recovery was uneventful and the woman went to term. Labor was spontaneous but the child was stillborn.

CASE 4.—Para 4. When six months pregnant, patient developed a cold. During a paroxysm of coughing she felt a violent pain in the right hypochondrium. Within twenty-four hours a tumor appeared in this region; temperature was 38. A few hours later the membranes ruptured and a severe vaginal hemorrhage occurred. A dead child was delivered by version and extraction. The condition of the tumor did not change following labor. Therefore one week after delivery the swelling was incised, with the escape of a large mass of coagulated blood from an encysted hematoma in the abdominal wall. Recovery was uneventful.

CASE 5.—A woman at term noticed a painful tumor develop suddenly, without any apparent reason, on the left side of the abdomen between the navel and symphysis. Operation showed a large hematoma in the rectus muscle. Recovery.

CASE 6. Para 5. Eight days before the onset of labor, when coughing, noticed something tear in the right upper abdomen. A tumor appeared which slowly enlarged with coughing, and movement of the abdominal walls was exquisitely painful. A diagnosis of twin pregnancy was made, but after the spontaneous delivery of a full term normal child the swelling remained unchanged. Subsequent incision over the tumor revealed a pint of partly fluid, partly clotted,

dark brown blood in the rectus muscle, the fibers of which were torn and slashed. The wound was drained. Recovery was uneventful.

CASE 7.—A woman at term presented with symptoms of an acute abdominal crisis. The preoperative diagnosis was rupture of an extra-uterine pregnancy or torsion of large ovarian cyst. Operation disclosed a tremendous hematoma of the rectus muscle.

The following hematomata developed during labor.

CASE 8.—Primipara, aet. 32, at term entered the hospital in labor. The patient had had a respiratory infection and a temperature of 38 although she had not coughed. Delivery was spontaneous, but during the expulsive stage of labor the conjunctivae became bloodshot. Immediately following labor the woman complained of a sharp pain immediately above the symphysis, and a tumor eight centimeters in width appeared at this point and extended almost to the umbilicus. The swelling was tender and hard to palpation. The bladder was catheterized without effect upon the size of the mass. The puerperium was febrile, but there were no symptoms suggesting infection of the breasts or pelvis. The tumor was continuously compressed for twenty days, with gradual diminution in the size of the mass but with no relief of the tenderness. One month after delivery bilateral thrombosis appeared in the legs, followed by chills and fever. Metastatic centers developed in the right knee and left middle ear. There was ultimate slow relief and recovery.

CASE 9.—Para 2, aet. 21, within one hour after a normal delivery complained of a sharp pain above the symphysis, and two tumor masses, separate from the uterus, appeared, extending from the pubis to the umbilicus. The overlying skin and fascia were freely movable. Ice-bags were applied, but one of the tumors steadily enlarged until the third day postpartum. Three weeks later the woman was discharged; the tumors were still apparent but had become smaller with absorbent treatment, and within six weeks had disappeared. The treatment was conservative because of the control of pain and the gradual diminution in size of the swellings after the third day of the puerperium.

CASE 10.—Primipara with typhoid fever went into premature labor in the seventh month of pregnancy. During the third stage of labor a tumor appeared in the right rectus at the level of the umbilicus which increased to the size of a coconut within twenty-four hours. The skin over the swelling became discolored. The tumor was semisolid. The swelling slowly decreased in size and disappeared at the end of six weeks. The mode of onset, gradual absorption, and discoloration of the overlying skin definitely indicated a hematoma of the right rectus muscle.

POSTTRAUMATIC HEMATOMA REPORT OF AUTHOR'S CASE

The following case report, although the hematoma was posttraumatic and is not included in the list, presents symptoms of unusual interest:

Para 7, aet. 44, a short time before delivery struck herself on the right side of the abdomen. This was followed by pain and disability which disappeared within a few days. Occasional attacks of pain were noticed at intervals on the right side. After delivery, however, a distinct tumor appeared in the right lower quadrant and, within three months, ascites, edema of the leg and dyspnea developed. The abdomen was tapped six times. The tumor remained unaltered; vaginal examination was negative. A provisional diagnosis of generalized abdominal malignancy was made but at operation no intra-abdominal disease was present, but in the substance of the right rectus muscle

a large hematoma was found after the removal of which, the torn ends of the deep epigastric artery were found.

SUMMARY OF OTHER CASES IN THE LITERATURE

In addition to the reports of hematoma occurring in pregnancy, forty-six cases of spontaneous rupture of the abdominal blood vessels in women were found in the literature.

Age.—The youngest patient was twenty-eight, the oldest ninety-three years. The age of the individual apparently had no relation to the rupture, for the frequency was about equal in the various decades.

Predisposing Factors.—Four women had definite myocardial disease and were receiving digitalis. Vomiting was the exciting cause of the hematoma in two of these patients. Evidence of arteriosclerotic changes were noted in only four elderly patients. A large percentage of the women were very obese.

Exciting Causes.—There was no apparent etiologic cause for the rupture in seven women. In every other instance (thirty-nine cases) sudden muscular effort or strain preceded the lesion. Thus, coughing, sitting up suddenly, twisting the body, lifting, loss of balance, vomiting, walking, undressing, and golfing are mentioned as inducing the attack. The frequent association of respiratory infections and spontaneous rupture is of interest. Rupture of the blood vessels followed coughing in one-third of the cases.

Site of Occurrence.—The hematoma was found six times more often in the lower than in the upper abdomen and more frequently on the right than on the left side.

The large majority of the women were multipara. The size of the hematoma ranged from a goose egg, coconut, or child's head, to that of a tumor filling more than one-half of the abdomen.

Symptoms.—The onset of symptoms in every case was sudden. Severe abdominal pain was always present; at times the pain radiated to the back and legs. A palpable tender tumor was constantly noted. Shock, collapse and prostration of varying degrees were not infrequent. Dyspnea, distention, vomiting, rapid weak pulse, and chills and fever often pointed to peritonitis and intra-abdominal disease. Urinary and fecal suppression occurred occasionally.

SUMMARY

A review of the entire series of fifty-seven cases is of interest from the standpoint of errors of diagnosis. The underlying pathology was suspected in only nine patients, and in five of these the diagnosis was confirmed by operation; in the remaining four the treatment was expectant; the slow disappearance of the tumor under compresses and the appearance of ecchymosis in the skin of the abdominal wall suggested the absorption of a hematoma.

In forty-seven reports the diagnosis was incorrect, but the acute symptoms demanded immediate treatment and the actual lesion was recognized only at the time of operation. When the

rupture occurred in the lower half of the abdomen the diagnosis of acute appendicitis or twisted ovarian cyst was frequently made; acute cholecystitis, renal calculus, and hydronephrosis were the usual preoperative diagnoses if the rupture occurred in the upper half of the abdomen. The severity of the symptoms and the variations of the clinical picture can be appreciated by an enumeration of some of the more common preoperative diagnoses, such as strangulated (omental, umbilical, inguinal) hernia, intestinal obstruction, mesenteric embolus, generalized abdominal malignancy, acute abdomen, malignancy of the sigmoid, twin pregnancy, ruptured uterus, and rupture of tubal pregnancy.

TREATMENT

The diagnosis having been established by laparotomy, evacuation of the hematoma, ligation of bleeding points and drainage were the usual procedures. When operation was delayed, liquefaction and secondary infection of the blood clots with staphylococci or colon bacilli demanded drainage. Absorbent measures were successfully carried out in only four of the fifty-seven cases. There were no deaths in the entire series.

University of California Medical School.

DISCUSSION

L. A. EMGE, M. D., (2000 Van Ness Avenue, San Francisco).—Doctor Maxwell's well-organized paper covers the essentials of this interesting condition so well that there is little left to discuss. I have no doubt that so-called spontaneous hematomata of the abdominal wall in women are more frequent than reported. Only the very severe hemorrhages due to rupture of the muscular portion of the deep epigastric artery or vein cause alarm and are reported. I have seen two lesser hemorrhages of the rectus muscle after delivery during the past ten years, one in a patient of our women's clinic at Stanford Medical School, and another in consultation practice. Both occurred in the left rectus sheath and manifested themselves as fist-size tumors several days after delivery. Soreness was the only symptom. Both were treated conservatively with ice-packs and later emptied by a suction with a Luer syringe. Recovery was uneventful. In reality, none of these hemorrhages are spontaneous. In most instances violent muscular contraction precedes the hemorrhage. The injury comes from within and usually includes rupture of the muscle fibers immediately surrounding the blood vessel.

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WILLIAM B. THOMPSON, M. D. (1930 Wilshire Boulevard, Los Angeles).—Doctor Maxwell is to be congratulated first upon discovering a patient with such a rare condition. It undoubtedly is true that, as in every other type of disorder, the bulk of occurrences are not recorded and are not available, therefore, for comparative study. Particularly is this true in the lesser degrees of injuries, whether spontaneous or traumatic. The condition she describes may be likened to charleyhorse in athletes, where a violent spasm of the muscles occurs because of the rupture of the few fibers. One readily imagines this process being extremely grave where blood vessels are torn apart by overviolent muscular action and by retraction of the torn ends where this involves a considerable portion of the muscle substance.

Since this condition is so unusual, Doctor Maxwell is to be congratulated more, I believe, upon the operative handling than upon the pure chance that the patient came under her care, in that the muscle was

so joined together that it withstood the strain of labor in term. One would be more inclined to expect poor union with tedious scar formation that might eventuate in a repetition of the injury when subjected to severe stress.

MATERNAL AND CHILD HYGIENE*

EDUCATIONAL ACTIVITIES OF THE LOS ANGELES COUNTY HEALTH DEPARTMENT THEREIN

By ELIZABETH M. SAPHRO, M. D.
Los Angeles

CHILD hygiene, as a term, formerly signified but two lines of endeavor: one, infant hygiene, especially infant feeding and the associated milk depots; and two, hygiene of the school child. These two activities were carried on with striking independence and indifference, one to the other, for a number of years. Finally there came the appreciation of the fact that the baby attending the milk station and the child later attending school was one and the same human being; also, an understanding that the final results obtained by either group in the effort to build for health depended to no small extent upon the physical condition of the child at the time the first constructive contact was made. The infant hygiene group turned to the obstetrician for aid, tritely stating, "Infant hygiene should begin nine months before the baby is born." Both the infant and school child groups simultaneously discovered the runabout or preschool child. So today we find prenatal, infant, preschool and school hygiene activities all thrown together in one interdependent group.

DEVELOPMENT OF THE DEPARTMENT ACTIVITIES

Primarily the various child hygiene activities were developed from the viewpoint of clinical medicine, and the first procedures to be standardized were modifications of clinical medical methods. Gradually principles of preventive medicine as well as curative medicine came to play a part in this field, and thus education, with health for its subject, became a factor in the work. The technique and context of an acceptable health education program have been given much study by the Los Angeles County Health Department, and this paper will discuss some of the ideas which have been used and developed by the health department.

The educational program provided by a child hygiene unit must be aimed to reach both the parent and the child. It should attract the interest of the parent, and in such a form that the information gained may be applied to all members of the family group. The child's interest must be obtained and the child must also be given the opportunity to practice over and over again the health precepts until these are thoroughly understood and have become a habitual reaction. In this training of the child the parent must be taken into our confidence. The cooperation of the parent in the home is invaluable in the establishment of

any habit, and this co-operation will never be fully gained if we humiliate the home in the eyes of the child. Parents are surprisingly willing to change their ways of living if the reasons and the value of the changes suggested can be shown to them. On the other hand they become resentful and antagonistic when the child comes home and criticizes the home upon the basis of facts it has been taught elsewhere.

IMPORTANCE OF PERSONAL CONTACTS

In endeavoring to put over this joint parent and child educational program, our department has tried booklets, lectures, and other similar methods. While all of these methods have a value we do not feel that in the end they are of as much worth as the personal contact between the health department and the parent, preferably through the mother.

The mother waiting her turn to see the doctor at one of the child hygiene conferences seemed to present an ideal opportunity for constructive educational contact. But how to accomplish this contact proved to be a problem. Lectures, no matter how short and snappy, as well as demonstrations and movies, all fell short of producing the desired results. Why? Because the mother always seemed either to come in the middle of things or her turn to consult with the doctor came before the climax with its teaching point had been reached. Only half of the story was ever presented, and half-stories are either uninteresting and therefore a bore, or what is more serious, the source of misinformation. It is also to be remembered that a waiting room filled with babies and runabouts hardly is a sufficiently silent and orderly place for a speaker to be heard, to say nothing of the mother being able to concentrate sufficiently to grasp what is being presented. Some tiny tot is always upsetting itself and the chair in which it has been sitting, and must be comforted and silenced.

INCORPORATION OF HABIT TRAINING AS A ROUTINE PART OF THE CHILD HYGIENE CONFERENCES

Child guidance and habit training are today receiving considerable attention in all child welfare groups. We therefore decided to determine if we could make a real contribution, reaching both the child and the parent, and at a cost not prohibitive for a health department. (The average cost per child served in a child guidance clinic is \$150.) To develop a preventive technique in habit training for the tiny child just as a preventive, physical technique has been developed. All to function as a single service in the various child hygiene conferences.

An excerpt from "Details of Methods Used," printed in the Los Angeles County Health Department News, for January 31, 1928, may be pertinent:

An interesting program in health habit training is being conducted one day each week at three of the Los Angeles County health centers in connection with the child welfare conferences. This activity is sponsored jointly by the Los Angeles County Health De-

* Read before the Pediatrics Section of the California Medical Association at the Fifty-Seventh Annual Session, April 30 to May 3, 1928.



Fig. 1.—A group of runabouts busily working at a low table, in chairs of proper height. Each child has selected its own piece of work. Every article is planned to both develop muscle coordination and teach good habits.



Fig. 2.—A tiny tot playing with blocks.

partment and the Los Angeles County Public Health Association.

The objective is to afford an opportunity for the children to engage in happy and purposeful activities while awaiting their turn with their mothers for a conference with the child welfare physician. Instead of fretful, impatient children and tired mothers telling each other of "Johnny's latest ailment," creating an atmosphere of nervous tension and depression, the waiting room is converted into a playroom with both children and mothers entering into the spirit of happy relaxation.

The materials which are used are well known to all educators of young children. They comprise blocks, wooden beads, peg boards, drawing paper, crayons, toys, etc. These are used through play to unconsciously illustrate various health ideas and train little bodies in useful coördination of muscles.

The attention of the boy building a house is called to its ventilation and opportunity for sunshine. Has it windows? Does plenty of sunshine flood its rooms?

The little girl playing with the doll is reminded that she should lie straight; that her clothes must be hung up to be aired, and so on.

The spirit of play and the natural imagination of the children are thus utilized to teach health habits in normal child-life situations.

A right attitude toward good foods is stimulated by coloring pictures of bright red apples, oranges, vegetables of various kinds, bottle of milk, etc. The children paste these pictures into little covers upon which are printed such inscriptions as "Eat some fruit each day"; "Eat vegetables daily"; "Drink a quart of milk a day." These booklets are given the children to carry home. The inscriptions indirectly remind the mother of the foods the children need.

The habits of orderliness, neatness, courtesy, and obedience are encouraged, until they are becoming established as habits with many of the little visitors at the conferences "who count the days" until they can return to the conference.

Books and periodicals on child training are made accessible to the mothers during the conference period of waiting.

INTERPRETATION OF PHOTOGRAPHS

The word picture above given may be illustrated through some photographs:

Figure 1. A group of runabouts busily working at a low table, in chairs of a proper height. Each child has selected its own piece of work. Every article is planned to both develop muscle coördination and teach one or more good habits. At first the mothers thought we were merely amusing the children while they were waiting for their consultation with the doctor, but before long

they grasped the motive underlying each procedure and began to bring to the conferences not only their physical troubles, but their temperamental troubles as well. The inexpensive instruction toys were copied or modified, and used in the homes. Please notice also that we have pictures with subject-matter appropriate to children which are placed low down upon the walls where the child may look at them in proper perspective.

Figure 2. A tiny tot playing with a box of blocks. On the floor have been placed washable rag rugs; thus the floor is made a safe, clean place for a baby to play. The blocks are much larger than the usual box of blocks for sale in stores, and are of many different sizes. The size of some is just right to fit a tiny baby's hand; others are larger and of shapes such that many different things may be created. The other day one little four-year-old spent the best part of an hour hunting out every block in the box of a given size and shape, an excellent training in shape perception and perseverance. Thus mothers learn that children like simple, useful toys which allow them to create and use their initiative and imagination rather than finished creations.

Figure 3. The same tiny tot playing with a large wooden animal toy. This toy is not too heavy for him to handle and is colored with a paint that can be washed and so kept clean, and also which will not come off in his mouth if he decides to put it there, which he probably will.

Figure 4. Hats and outer wraps must be removed and cared for. What can train a child better (and the parent as well) in neatness, orderliness of person and the proper airing for garments than the opportunity to use a rack that is not too high for him to reach, especially when each coat hanger is gaily painted. Try to throw a child's coat down just anywhere after he has once had a chance to hang it upon one of these gaily painted hangers. You probably will not succeed. At least the child will in some manner express its disapproval.

COMMENT

Habit training is only half of the teaching presented to the mothers at the child hygiene confer-



Fig. 3.—The same tiny tot playing with a large wooden animal toy.



Fig. 4.—A coat rack with individual gaily painted coat hangers.

ence. The mother often needs help in preparing the food ordered for her child. Personally I cannot blame many of the children for refusing to eat vegetables or other foods that are good for them when I see how they are prepared and served. Each week a nutritionist prepares a simple demonstration of either some particular food cooked in an unusual way (each mother is given a taste to see the dish is really palatable), or an acceptable day's menu for a child of say, six years of age is presented. The sincerity of the mother's questions is undeniable, but most obvious are the hazy ideas many of them evidence by their questions and remarks.*

Whenevr the attending physician writes a new type of formula for the baby or prescribes a definite diet or change of diet for a runabout, these diet orders are given to the nutritionist, who explains them in detail to the mother. An aim is made never to give out these mimeographed articles except when their definite need is shown and even then, rarely is more than one given out at a time. A single piece of literature given to a mother at the time when the need for the information it contains is appreciated, and with a personal touch from some worker known and trusted by the mother, is a piece of literature read. A table full of literature, no matter how attractive and valuable, left for the mother to read or leave at her pleasure, is rarely utilized. The gay-colored booklets are given sometimes to the children to tear up. Occasionally a booklet is taken home with the intention of reading it, but careful questioning shows that rarely is the information in the booklet applied to the life of the family. Therefore we have abandoned the promiscuous distribution of literature and substituted short, clear-cut articles to be used as their specific need arises.

Both the child health guide—as we have titled our habit instructor—and the nutritionist have brought to them by the mothers many of the problems of the homes. Some of these problems must

be handled by the doctor, others by the nurse. It is upon the nature of the problems presented that the material for subsequent conferences are based.

It is too early accurately to evaluate the results of this procedure, but the waiting rooms of our child hygiene conferences, instead of being filled with worn-out mothers and fretful children, are now filled with mothers who come early and stay late, and with children who really count the days until they can come again and play in our health centers. Problems in habit training are discussed and an endeavor is made to correct bad habits before they become fixed to handicap the child and become an annoyance to those around him. We feel that the prevention of undesirable habits is as much of a responsibility of a child hygiene division as is a proper diet. A healthy child must be healthy in both mind and body; neither one can carry on without the other. The pediatrician should guide both simultaneously. Therefore we have built our unit to consist of: first, a trained pediatrician; second, a public health nurse; third, a child health guide; and fourth, a nutritionist, all working in harmony for the complete welfare of the child.

Hall of Justice.

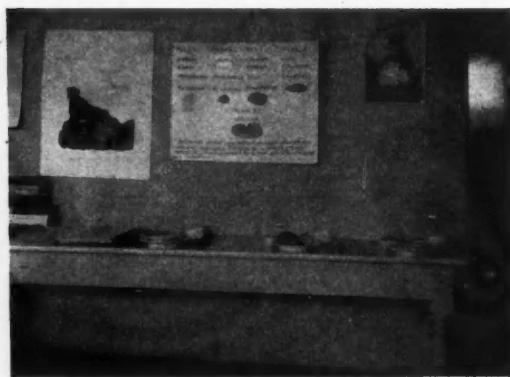


Fig. 5.—Demonstration of an acceptable day's menu for a child of six years of age. The food properly chosen, cooked and served. An explanatory mimeograph article accompanies demonstration.

* A series of mimeographed articles on such topics as: body-building foods; proteins; vitamin B; and iron foods has been prepared. Any reader who is interested can obtain copies by addressing the Los Angeles Health Department, Hall of Justice, Los Angeles.

INDUSTRIAL DISEASES AND THE PUBLIC HEALTH*

By WILLIAM C. HASSSLER, M. D.
San Francisco

DISCUSSION by J. L. Pomeroy, M. D., Los Angeles; John J. Sippy, M. D., Stockton; Roscoe N. Gray, M. D., San Francisco.

THE revolution brought about in the various industries in the early part of the nineteenth century was the beginning of many industrial hazards formerly unknown, this in the main being due to the substitution of steam for water power. In the latter part of that century the hazards associated with machinery having steam as a motive power were multiplied, because of the increasing use of electricity and gasoline.

Those inventions brought into existence new machinery; and so subdivided labor that women and children became a factor in many classes of industry not previously open to them. As time speeds on, with increasing world population, we may expect many more such changes to take place. The social environment of our day is surrounded not only by greater comforts and pleasures in every walk of life than at any period in history, but also by greater hazards to life and longevity.

Ours is an age of machinery, of synthetic products, including even those of food and drink, and of new poisons in the mechanical arts and sciences. All these have brought new stress upon the body tissues of human beings, and new strains on the vascular and nervous systems. In other words, the mind and the body are in a continuous struggle for supremacy over the factors that operate insidiously or acutely, to injure the body structures or alter their activities in such manner as to interfere with the full enjoyment of life and its normal span of existence.

The end-results of such factors, whether caused by toxic substances, deleterious environments in factory or workshop, or by hazard to life and limbs, are classified as occupational diseases or diseases of industry. For the most part the diseases of industry are preventable.

Daily experience, however, brings to light exceptions to this ideal in prophylaxis, particularly in the profession of medicine and nursing. For example, hospitals require that all medical interns, nurses, and other employees must have had immunity treatment for typhoid, scarlet fever, diphtheria, and smallpox. Before such hospital attendants are assigned to the communicable disease division, they are checked to determine whether such treatment has been undergone. Yet annually we have illness and deaths and resultant industrial claims to meet because the virulence of the type of smallpox, scarlet fever, or diphtheria was greater than the protection the prophylactic agents were able to establish.

Other exceptions to absolute prevention in industrial hazards could be quoted, and more than legislative enactments will be necessary to control

absolutely such exceptions. In the future such exceptions will be reduced by proper education of the man or woman in industry, in personal, home, and factory hygiene, and in the specific hazards of occupations.

The moral and social influence which unions, workingmen's clubs, lodges, and benefit and insurance societies can wield in prophylactic education in industrial fields has never been appreciated.

The medical profession as a whole, and especially physicians engaged in the practice of industrial medicine, must play a more definite rôle in educating the workmen and the public. The influence of the family doctor is very great in America, and if all family physicians did their full part in this work they would accomplish more than any lay commission. Not that we would expect the members of the medical profession to eliminate or replace these various lay societies, but rather that they should join with them and support their efforts, just as was done in the fight against tuberculosis.

PHYSICAL EXAMINATIONS

One of the great needs, and perhaps one that could be made to be an outstanding factor in the welfare of all who are in any way engaged in industrial occupations is that annual physical examinations should be made (in the specially hazardous occupations such examinations could be repeated every three months); complete in every detail, and with special inquiry as to the presence of any of the deleterious effects of hazardous trades.

It is easy to assess the disability or determine the degree of disability which may be the result of an accident. But to determine justly the disability resulting from lead or arsenic, the relation to industry of the tuberculosis of the baker or miner, of the tick fever of the cattleman and sheep herder, of the Malta fever of the milker, or of bronchitis, anemia, malnutrition in a man subject to gas poisoning, and so on, is often most difficult, because the causative factors of these conditions are often obscure, and their onset hard to fix. In addition their course is usually chronic.

A physical examination might bring to light a beginning arteriosclerosis, a nephritis, a heart lesion, a gastric ulcer, a beginning tuberculosis, infestation with protozoa, or a cancer, at such early date as would give a major chance of cure and so relieve future misery. Such physical examination in the writer's opinion would do more to cure and prevent the spread of syphilis and gonorrhea than all the present legislation.

Conditions and results now frequently charged to contributory negligence might be eliminated by the physical examination. Accidents are often the fault of an inability of coordination of the senses, such as the direct result of an old or improperly treated syphilis. For example, the foreman of a quarry gave the order to "shoot" and after a large boulder loosened by the blast had crushed his legs, he stated, "I saw it break and thought I had plenty of time before it could reach me." A physical examination proved that he had a triple plus Wassermann, a well-defined Romberg,

* Read before the Industrial Medicine and Surgery Section of the California Medical Association at its Fifty-Seventh Annual Session, April 30 to May 3, 1928.

and the characteristic light reactions and other evidence of a beginning general paresis.

On the other hand, the painter who slipped from a scaffold, and fell two stories to his death, had taken a swig of alcohol just prior to mounting the scaffold. Undoubtedly he contributed to his death, and a physical examination would not have changed the result.

THE SINGLE MAN AND THE ITINERANT LABORER

A very large group of workers, mainly composed of single men working in the woods, in mines and on construction work, and also itinerant laborers in agriculture, are sadly lacking in opportunity for medical examinations, when at the end of their season they migrate to the populous centers. Frequently their bedding, and often their clothing, is vermin-infested, with no place (at least in San Francisco) where the self-respecting man temporarily out of employment can go for a cleansing. Consequently such men may become potential menaces to the public health of the community. It would seem that the only solution would be to require all classes of labor to carry health status cards, just as the majority are now compelled to have union cards.

THE RELATIONSHIP BETWEEN DISEASES OF OCCUPATION AND PUBLIC HEALTH

The relationship of diseases of industry to other diseases and to the general public health is not only well established but exceedingly important from the economic viewpoint. That which menaces the individual, directly or indirectly, menaces community health; and health departments all over the land have one or more inspectors or social workers who are detailed to factory and workshop inspection.

TUBERCULOSIS

An illustration of this menace is well exemplified in tuberculosis among men in industry. The records of San Francisco reveal that, during the last twelve years, there were recorded 10,040 deaths from this disease. Of this number, 73 per cent were men and only 27 per cent were women. The heaviest death rate was between the ages of thirty and thirty-five, for which period 2414 men and 1772 women died from this disease. This shows that in San Francisco, as elsewhere, the tuberculosis hazard in the wage-earning group of men is especially great in the prime of life.

These men have generally established homes; they have wives and children, and usually these children are young. The experience of tuberculosis associations all over the world has proven that the major portion of the problems of social workers arise from this one phase of tuberculosis incidence; and that much of the preventive or curative work is concerned with this group of infected persons. A serious social and economic problem is brought into being when the breadwinner is diagnosed as having tuberculosis and is sent to a hospital or sanatorium. What is to happen to the family of such a patient? For in addition to the possibility of having infected one or more members of the family before the cause of illness was disclosed, debts accumulate, starva-

tion may threaten, the home and family may be broken up.

Again there is the case of the worker who has been unable to carry through an adequate course of sanitarium treatment, and who must return home. Such an unfortunate on his return may find a large extra burden of debt and no work to which he can turn his hand. The standard of living for such a family becomes lower and lower. In desperation the breadwinner may return to the work that originally caused his breakdown. In a short time he is again incapacitated; and returns to the hospital only to die. Thus is completed a vicious circle, which because of inadequate social machinery to aid in the rehabilitation of the tuberculous individual only increases the cost of the original problem.

How could this social and economic question be improved? The following are some of the remedial factors which come to mind:

1. Assistance of the dependents of those patients who are under institutional treatment.
2. Providing a changed and suitable employment for those sufficiently restored to health to be fit for work.
3. Social service work with the family, helping well members to increase their earning capacity.
4. A rearrangement of the home; or securing of more suitable home so that the patient's health may be maintained, and the danger of home cross-infection minimized.
5. Financial aid on a basis of no interest, and easy or long term payments.

From the writer's experience in some of these problems, he is led to believe that if the physicians who are doing industrial medical work were hired by the brawn and muscle instead of by the employing company or corporation, there would long ago have been created safer working conditions; and a saner and more far-reaching social service than now exists, and an entirely different form of workmen's insurance.

OTHER DISEASES

There are a number of other diseases of industry which are possible of communication to contacts of the workman. Among those are anthrax, or woolsorter's disease; hookworm disease, sometimes called "miners' anemia"; typhoid contracted from a polluted water supply of a factory or workshop.

Tularemia of the Rocky Mountain states, transmitted by the woodtick (*Dermacentor andersoni*), the deerfly (*Chrysops discalis*) and undoubtedly by other suctorial insects that feed on various rodents, rabbits, domestic animals, and man. This disease can be brought by the infected individual to remote communities. Malta fever, also called "undulant fever," contracted by milkers as in a recently reported epidemic in Phoenix, shows these infected milkers may remain carriers for two years and perhaps for life.

School teachers are prone to become victims of the communicable diseases of children. Then we have that large group of workmen who become carriers of the pathogenic organisms of a number of the contagious and infectious diseases; such

as conductors on our street cars who have during the past year in San Francisco carried diphtheria, scarlet fever, and infantile paralysis to their homes. A doctor carried poliomyelitis to his family within the past four months. In the San Francisco epidemic of poliomyelitis this year we found a large number of cases occurring in the families of men and women engaged in indoor work. Milkers on dairies have been responsible for outbreaks of septic sore throat, typhoid fever, diphtheria, and scarlet fever. Recently Malta fever was carried by milk distributors from the dairy where they were employed to consumers of unpasteurized milk. In many of the instances here cited there exists a direct relationship where cause and effect are directly traceable between industry and the public.

In the mind of every public health worker there must come the question: To what degree is the morbidity and mortality ratio of the workman's family due to the hazards of his occupation? Does it really matter whether the breakdown comes from lead or arsenic or poor lighting, or the accident from unprotected machinery? Need the disease of occupation necessarily be directly communicable like that of tuberculosis? Is it not a fact that anything which diminishes the efficiency or incapacitates the breadwinner causes a lowering of the standard of living that results in malnutrition, a lowering of resistance and a susceptibility to disease, especially when this incapacity comes into an existing environment that has all the concomitant factors such as dampness, poor light and ventilation, and a number of other things that surround the large family of the laborer. Not only is there in these cases as direct a relationship between occupational disease and general health as in the case of the specific diseases already mentioned, but the effects go further. For they tend to lower the moral standards, and thus often become factors in bringing patients to asylums, almshouses, and prisons.

Another public health problem that is now receiving greater attention than heretofore, has to do with the maternal and congenital effects of occupation on the prospective mother. Through the agency of our prenatal and postnatal clinics, an effort is being made to reduce the number of premature deliveries, of stillbirths, and of mortality of the babies in the first year of life, as well as to bring about a reduction in the maternal death rate. We know definitely that lead, for example, like syphilis or alcohol, may cause sterility; or if pregnancy occurs, more often than otherwise, the lead has a dwarfing and crippling influence upon the fetus, that may result in a child with permanent mental and physical defects.

The recognition of the hazards of industry to the workman is old; in fact, it dates back to 1713, when Bernardino Ramazzini of Padua published a treatise on tradesmen's diseases, but the recognition of their effects upon and relationship to public health is comparatively recent. The ill health among workers which sends four million people to hospitals each year has also changed our social viewpoint. The employers (and there are still many), who hold that their responsibility

ends with the payment of wages, and their compliance with government regulations, are out of step with modern civilization and should stand at the head of the list of failures in business. On the other hand, the employers who are appreciative of the facts that attention to the health of their employees and their families, and that provision of congenial working conditions more than justify the money expenditure involved, because of the contentment, the increased efficiency, less loss of time, the higher output and increased sales capacity of their employees, are constantly increasing.

Public health is an economic question that outranks all others in any community. The success and prosperity of commerce and industry, in fact the stability of the government itself rests upon the positive health of its citizens.

The solemn duty of bringing about better health standards in our various communities rests not only upon the health officials, but upon the professional men and women engaged in industrial medicine and industrial hygiene.

SUMMARY

In closing, the following suggestions are offered:

1. That diseases of industry have a close relationship with and, in many instances, a direct bearing upon health and community problems.
2. The state should enforce compulsory education of men and women in industry concerning special hazards of their work, as well as in industrial and home hygiene.
3. The coöperation of unions, lodges, and of insurance societies should be sought in the holding of lectures and clinics, demonstration of protective and preventive measures and first aid along the lines now practiced by the Bureau of Mines, the telephone companies, and other organizations.
4. Physical examinations and issuance of health cards to all workmen and women prior to employment should be required, and as often thereafter as the hazards of the industry indicate, in order to better maintain health. Such complete examinations should be made in every instance at least once a year.
5. A physical survey should be made of individuals engaged in the various industries for the purpose of establishing health standards.
6. Mortality and morbidity data should be collected and compiled; and reports and other information for the instruction and benefit of both workman and the public should be published.
7. A uniform method for recording medical data and records should be adopted.
8. Health and industrial authorities and social agencies should have coöperation in investigating and correcting problems connected with industrial hygiene.
9. The scope and the work of social service and industrial welfare bodies should be encouraged and broadened. Endeavor to bring about facilities not only for physical examinations, but for medical, dental and nursing service in all places of employment should be made.
10. Legislation should be promoted to compel all cities of the first and second class to establish

disinfecting stations as prophylactic and public health measures.

11. Universities should be encouraged to provide in their medical schools facilities for the proper teaching and training of medical practitioners in industrial medicine.

To these might be added a recommendation that physicians engaged in industrial medicine and welfare work, backed by employers of labor in any and all branches, might well form and hold annual conferences with officials and representatives of labor to insure uniformity of reports and records and promote further action on the various other subjects pertinent to industrial hygiene.

1085 Mission Street.

DISCUSSION

J. L. POMEROY, M. D. (330 North Broadway, Los Angeles).—California, so largely in times past an agricultural state except in the vicinity of the larger cities, is now undergoing a rapid change to industrial centers. It is time that study is given to this problem. Doctor Hassler has laid out a splendid plan for developing industrial medicine and industrial hygiene. In the Los Angeles County Health Department we have under consideration the opening of a division of industrial medicine and hygiene to take special care of this problem. While conditions differ in different parts of California and the character of industries is somewhat different, there is no question whatever that special attention should be paid to industrial diseases.

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JOHN J. SIPPY, M. D. (San Joaquin Local Health District, Stockton).—Our old ideas that industrial hazards were limited to the mechanical trades are vanishing, as evidenced by more and more liberal interpretation of employers' liability laws. Doctor Hassler has indicated need of still wider scope in such enactments, as well as of more intensive education of both employer and employee. His comment that if "industrial physicians were hired by brawn and muscle instead of by the employing company or corporation" is pertinent, especially when one views the variation of concern felt for the health of the employee by the companies who operate health and hospital associations in conjunction with employees, and those which do not. California has a serious problem in the itinerant laborer in that responsibility for his welfare is hard to fix upon any county or municipality. Undoubtedly, on account of the brevity of employment of so many of these persons, physical examinations and observations would prove an economic burden upon either employees or employers, even granting the remote notion that they might be brought to perceive the ethics of the procedure. Undoubtedly the state will eventually assume some such responsibility, either directly or by delegation of authority to county and city. Certainly the latter units must seek some such remedy if expenditures for hospitals and social relief activities are to be curtailed. It is a nice problem for joint solution by the physicians, health officials, and welfare workers.

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ROSCOE N. GRAY, M. D. (333 Pine Street, San Francisco).—Uniform records of morbidity must be developed and careful studies made to determine how we may best proceed to put Doctor Hassler's suggestions into practical operation. He has pointed the way, groping through the darkness of our limited knowledge, but he would be the first to agree that even his trained mind is handicapped by inexact information, leading to recommendations which may not all be practical. He therefore pleads that uniform records be adopted, physical surveys of those at work be made to develop standards of health, and the results of these studies be published for the benefit of society. Such must be done before safe progress may be made.

To encourage the scope of social service and industrial welfare bodies and to provide medical, dental

and nursing service in all places of employment cannot be done without a very close approach to state medicine. I do not believe we are ready to lose our individual identity through paternalistic provision of such service by our employers. A better plan than that developed in Great Britain and Germany must be found before we can successfully go too far with providing compulsory medical service in all places of employment.

It seems strange, when compensation laws are in force in nearly every state, and it is accepted that the best industrial medical work requires special thought and training, that so little effort is made by our medical schools to teach industrial medicine. The industrial surgeon is a specialist with no school for special training other than "The College of Hard Knocks."

How far the state may safely enforce compulsory education in industrial and home hygiene cannot be determined. To even approach worthwhile education would require a tremendous addition to our present teaching institutions. I doubt if such education should be applied through compulsion to men and women until we have so taught our children. Children are easier to teach, and the facilities are at hand. Why not use them more fully to teach home and industrial hygiene?

Physical examination will undoubtedly uncover many conditions that ultimately lead to untold suffering, but who is to pay for compulsory examinations to be made at least yearly? The cost would be millions annually. Is the cost to be assessed against industry, the individual, or the state? Vastly increased policing is the price of compulsory health cards before employment to insure that the diseased do not avoid the law. More thought must be given to the problem of placing those physically not fitted to the occupation they desire to follow. Otherwise compulsory health cards before employment will start a hornet's nest of injustice and discontent.

We should request Doctor Hassler to submit specific legislation leading to disinfecting stations in large cities as a public health measure. His brief for their necessity seems unanswerable and he is entitled to the backing of the medical profession in securing the passage of such legislation at an early date.

THE LURE OF MEDICAL HISTORY

THE STORY OF DIGITALIS

By WILLIAM DOCK, M. D.,
San Francisco

NO medicinal plant has been more fortunate in its introduction to general use, and none more lauded, abused and discredited than the foxglove. It was first described in *Campanula sylvestris* (Waldglocke), by Hieronymus Bock in 1539. It was named *Digitalis purpurea* in 1542 by the botanist and professor of medicine, Fuchs, of Tübingen. The word "foxglove" occurs in English herbals as far back as the eleventh century Saxon "Leechbook." The plant was primarily used for external application, although it had some reputation in the cure of scrofula, cough, and epilepsy. However, by 1770 it seems to have been widely used, chiefly by laymen, in certain parts of England for treating dropsies. Hearing of such cures, William Withering of Birmingham began prescribing the drug to his patients, but toxic symptoms caused him to hesitate in continuing its use. Often, with drugs used by quacks, the cure of some prominent person leads to intensive study by competent physicians. It was such a cure of hydrops pectoris in the principal of Brazen Nose College, Oxford, that led Withering to continue his investigations on digitalis. His friends also took up the drug for the treatment of dropsical

patients; its use was begun at Edinburgh in 1779 and it was included in the pharmacopeia there in 1783.

Mr. Charles Darwin, uncle of the great naturalist, had learned of this use of digitalis, and his posthumously published papers contain the first account of its curing dropsy. They appeared in print in 1780, one year after his death at the age of twenty, and were abstracted in 1783 in the *Medical Commentaries*. The case there described is of particular interest since the patient had been seen in consultation by Withering, who ordered the digitalis.

In 1785 appeared William Withering's "An Account of the Foxglove and Some of Its Medical Uses: with Practical Remarks on Dropsy, and Other Diseases." With this book Withering, an experienced physician and botanist, had produced the world's therapeutic classic. The modesty, caution and accuracy of this presentation are all equally remarkable. He says, "It would have been an easy task to have given select cases, whose successful treatment would have spoken strongly in favor of the medicine. I have, therefore, mentioned every case in which I have prescribed foxglove, proper or improper, successful or otherwise." He laid down intelligent advice on dosage and exhibition of the drug: "Let it be continued until it either acts on the kidneys, the stomach, the pulse, or the bowels; let it be stopped on the first appearance of any one of these effects." His usual dose was one to three grains of powdered leaf per day. While we may smile at some of the diseases he benefited with it, we can agree with his main conclusion: "It seldom succeeds in those with a tight and cordy pulse. On the contrary, if the pulse be feeble or intermitting, we may expect the diuretic effects to follow in a kindly manner." Case 4 of his series of 160 patients is apparently the one included in Charles Darwin's account. Withering states her "pulse was extremely weak and irregular," after digitalis it became "more full and more regular." He concluded that digitalis "has a power over the motion of the heart, to a degree yet unobserved in any

Digitalis purpurea.
Brauner fingerhut.



kk 2
Digitalis purpurea, from the earliest woodcut, first volume of "De Stirpium Historia" of Leonhart Fuchs. This book, dedicated to Anthony Fugger, was printed in 1542 and reprinted in 1545. The blocks were used for numerous botanical and medical works in the next thirty years.

other medicine, and that this power may be converted to salutary ends."

Three years before this book, Saunders had written an account of cures of consumption by digitalis. The difficulty of differential diagnosis between phthisis and mitral heart disease, in the days when even inspection of the thorax was rarely practiced, is obvious. We must not be surprised that Withering's work was largely ignored and for twenty years most reports on digitalis dealt with its effects on phthisis. Regular and miraculous cures were reported, particularly about 1792 and 1799-1802, with a hiatus along toward 1797, when the drug was wholly neglected. The discoverers were hailed as equal to Harvey, and one author concluded that "consumption will henceforward as regularly be cured by the fox-glove, as ague by Peruvian bark." At this time began the discussion, still warmly argued, as to whether digitalis was a circulatory stimulant or sedative. Ferriars first urged the latter, Beddoes, who had measured pulse pressure with a rude device, the former theory of its action.

In 1807 William Hamilton gave a review of the history of the drug, together with his success in giving it to patients with scarlatinal nephritis, phthisis, dropsy, but more particularly in cases of hydrothorax. He followed Withering closely in his work and stressed the importance of Withering's book. Like the latter, Hamilton regarded hydrothorax as distinguished not only by orthopnea, but by "the intermission and irregularity of the pulse—the most marked and common symptom." Withering too had thought hydrothorax to be usually curable with foxglove.

In the same year appeared a treatise "proving that the Medicinal Properties of the Digitalis are diametrically opposite to what they are believed to be." This work, by "James Sanders, one of the Presidents of the Royal Medical and Royal Physical Societies of Edinburgh," proved that digitalis, in two thousand observations, had accelerated the pulse and stimulated the heart. It was translated into many languages and seriously debated for half a century by Continental authors. I fear they overlooked the scorching review of this book in the *Edinburgh Medical and Surgical Journal*, for they would have learned that Sanders was a medical student, whose observations were made at student "digitalis parties," and who is contrasted by the reviewer with "those weak minds, Cullen, Darwin, Rush, Willis." "His hopes are raised, his imagination is excited by the prospect of being the champion of truth, against error sanctioned by great names." Fifteen years later the stimulant theory of digitalis action was revived by Joeg, a Leipsic obstetrician, who observed in himself and fellow members of a club, marked aphrodisiac and cardiac augmentation after minute doses of the drug.

In the main we may conclude that for a century after Withering's first observations, digitalis was considered a cardiac sedative and, except for Hamilton and Blackall (1811), there were no records of intelligent use. Some, like Laennec, considered it of little value, others of the great

clinicians—Hope, Latham, Stokes, Flint, Walshe—used it fearfully in ineffectual doses. In France, Germany, and Italy its successful use was occasionally reported. Traube confirmed Blake's observation that it raised blood pressure, but considered it a sedative which diminished blood flow and oxygenation. About 1870, as we may see by comparing the first and second editions of Flint's (1859 and 1870) and Walshe's (1862 and 1874) treatises on heart disease, the rôle of digitalis as a cardiac tonic became firmly established. Walshe, acknowledging the error of his earlier views, points to Withering's remarks on the difference in effect of digitalis on the "tight and cordy" and the "feeble and intermitting" pulse as proving that Withering had known from the start that digitalis' stimulant action alone is important in the cure of disease. Not until the work of Cushny and James MacKenzie was it realized that digitalis does not act on all patients in the same way, but slows the pulse most brilliantly in those who have auricular fibrillation. Only after this was it possible to investigate its effect on heart failure uncomplicated by arrhythmia.

Stanford University School of Medicine.

CLINICAL NOTES, CASE REPORTS AND NEW INSTRUMENTS

TULAREMIA*

REPORT OF CASES

By CLAIR L. STEALY, M. D.
AND
DAVID MILLER, M. D.
San Diego

THE following is a report of two cases of tularemia, the first of which was seen at the San Diego County General Hospital, and the second at the Rees-Stealy Clinic.

REPORT OF CASES

CASE 1.—The first patient was a young man, age eighteen years, and single, who worked on a dairy farm, but had no contact with any of the animals. He was admitted to the hospital on July 10, 1928, complaining of a swollen eye, large masses on the left side of face and neck, a painful left ear, and painful swallowing. This condition had its onset two weeks prior to admission, and began with swelling of the lids of the left eye. The swelling increased progressively and rapidly for three days, at which time he noticed small lumps in front of the left ear, just at the angle of the left jaw and on the left side of the neck. On July 3 he had chilly sensations, cold sweats, and a fever. He did nothing to relieve the condition of the eye, but he took numerous hot drinks to relieve the chilly sensations, with considerable success.

Upon investigation it was discovered that the patient had been hunting rabbits and squirrels in the Mission Hills of San Diego, and on about the third day of this hunting trip, which lasted one week, the present illness had its onset as described. He caught many rabbits and squirrels, all of which he and his younger brother dressed; the squirrels were fed to their house cat, and the rabbits were used as food for the family. The patient does not remember having injured either

* From the San Diego County General Hospital, San Diego.

his eye or his hands during that week of hunting and dressing these animals, and does not remember splashing any of the animals' blood into his eyes.

No symptoms referable to the cardiorespiratory, gastro-intestinal or genito-urinary systems were present. There was no history of gonorrhea or lues. The patient had had the usual childhood diseases and when in the grade schools had had a condition of the right eye which he himself thought to be "pink eye." Other than this he had never had any difficulty with his vision. The family history was negative.

Physical examination showed a young man well developed, well nourished and of good mentality. The temperature was 102.6 degrees, the pulse 96, of good quality and regular, the respiration 22, and not labored. The right eye, nose, and right ear were negative.

The upper and lower lids of the left eye were extremely swollen and injected, and the eye completely closed and exuding a muco-watery secretion. The conjunctival covering of the eyeball was extremely injected and swollen, but the cornea and iris remained entirely uninvoluted; the pupil was normal in size and reaction. Eversion of the eyelids revealed on the palpebral conjunctiva, many deep, round, yellow necrotic ulcers. These ulcers had a punched-out appearance and varied from one millimeter to five millimeters in size. They ran down almost to the tarsus and were noted also over the upper and lower tarsi. The surrounding conjunctiva was a deep red color, soggy and swollen, but did not bleed when wiped with a wet cotton sponge.

The mouth, teeth, and tongue were negative. The left tonsil was injected and showed several small ulcerations like those in the eye. The pharynx and tonsillar pillars on the left side were also injected.

The left preauricular lymph gland was the size of a cherry and tender to the touch. The external auricular canal of the left ear was clear but somewhat narrowed by the pressure of the gland. On the skin over the left zygomatic bone and arch were six small pustules. The superficial cervical lymph glands at the angle of the left jaw were somewhat matted together, about the size of a hen's egg and extremely tender, but did not fluctuate. The left axillary glands were small but palpable. There were no other glandular enlargements.

The liver and spleen were not palpable and the remainder of the examination was entirely negative. There were no ulcerations on the hands or extremities.

Laboratory findings showed the urine to be negative throughout. White blood count was 15,200. A differential count showed: polymorphonuclears, 65 per cent; lymphocytes, 31 per cent; and large mononuclears, 5 per cent. The Wassermann was negative.

A smear from the left eye, taken on the day of admission to the hospital, was negative for any organisms. On July 18, 1928, blood from the patient, sent to the United States Public Health Center for agglutination, was reported positive for tularemia.

On July 24, 1928, the preauricular gland was aspirated and about two cubic centimeters of brownish colored pus obtained, part of which was used for a culture and part injected into the abdomen of a rabbit. Smear from this pus was sterile. On August 7, 1928, the rabbit was killed. It showed no symptoms of illness, and examination revealed no pathological lesion.

On August 15, 1928, the preauricular gland was opened and a rubber drain inserted. The gland discharged a brownish colored pus for several days and then healed completely.

The patient had no more trouble and was discharged as cured. One month later the patient returned to the clinic for observation, and was found to be in satisfactory condition.

CASE 2.—The second patient was a man, sixty-nine years of age, who scratched his left thumb while dress-

ing rabbits. Ten days later a small papule developed on the thumb, which later broke down into a granulomatous area, with lymphangitis streaking up the arm, chills, fever, and swelling of the axillary glands. The patient was markedly prostrated and weak and was sent to the hospital, where dressings were applied to the thumb and compresses to the swollen axillary glands. The glands gradually increased in size and were finally incised and a large quantity of thick pus was evacuated. Smears were negative. After resolution had taken place there was apparently marked infiltration of fibrous tissue as the glands are still, four months later, very hard.

During his stay in the hospital the patient developed what appeared to be an acute cold with a recurrence of temperature. This subsided, but the cough persisted for a week or ten days.

Physical examination upon entrance to the hospital, with the exception of the findings noted above, was essentially negative. The heart was not enlarged, the sounds were of good quality, and the blood pressure 140/80. The urine showed an acid reaction with a specific gravity of 1.027; microscopic examination showed very occasional red and white blood cells and a few bacteria. The blood count showed: red corpuscles, 4,430,000; hemoglobin, 80 per cent; and white corpuscles, 11,300. The differential count was: polymorphonuclears, 77 per cent; and small lymphocytes, 23 per cent. Blood sent to the State Hygienic Laboratory at the University of California, in Berkeley, was reported positive for tularemia, with an agglutination of 1 to 1280.

COMMENT

The points of interest in the second patient were the small granuloma of the thumb which was about one-quarter of an inch in diameter, elevated less than one-eighth of an inch, and which exuded only a small amount of seropurulent material; and the fact that the general symptoms were out of all proportion to the initial lesion. It was this latter fact together with the history which suggested the possibility of a tularemia.[†]

Rees-Stealy Clinic.

DRIED MILK AS A DRESSING FOR INTESTINAL FISTULA*

REPORT OF CASE

By CLARENCE E. REES, M.D.
San Diego

THE contact of the digestive ferments of the pancreas and small intestine with the skin in cases of intestinal fistula is the cause of a great deal of distress to the patient suffering therefrom. It is generally true that the higher the fistula the greater the erosion and maceration. Often the burning pain is constant, and relief is obtained only by very frequent changes of dressings and the application of bland ointments such as lanolin, zinc oxid, vaselin, and mild acid dressings, the soothing effect of which lasts only for a few minutes. Only too often the irritation continues until the secretions have lessened from a closing of the fistula or until the fistula is closed surgically. The deeper structures beneath the skin seem to withstand the action of the ferments well, and since

[†] All laboratory work for the first case was done by Ernest Mundkowski of the San Diego County General Hospital.

* From the Rees-Stealy Clinic, San Diego.

they have a minimal sensory nerve supply no discomfort is caused through them.

Because of these facts we believe that our experience with a new dressing (whole dried milk) as used in the following case may be of interest.

REPORT OF CASE

The patient, a male, age fifty-four years, was operated upon for carcinoma of the antrum of the stomach. The distal half of the stomach and, in order to get well beyond the growth, about 3.5 centimeters of the duodenum distal to the pylorus were resected, leaving a short stump closely attached to the head of the pancreas. Closure of the duodenum was made with three layers of catgut, but there was considerable tension on the last row of sutures. The remainder of the operation was completed without difficulty and the abdominal wound closed without drainage. The patient had an easy convalescence and left the hospital in two weeks.

Ten days after returning home, and twenty-four days after the operation, the patient was seized with abdominal pain followed by vomiting. When we saw him shortly afterward, he was suffering intensely and had exquisite upper right quadrant tenderness associated with localized board-like rigidity. The patient returned to the hospital and immediate exploration was advised but refused. The next morning there was marked increase in the general abdominal distention and permission was given to open the abdomen. Incision was made to the right of the scar of the former operation. The upper right quadrant was found to be well walled off, containing about 150 cubic centimeters of dark grayish fluid, and all structures were intensely inflamed. A small opening was found in the suture line of the duodenal stump. As suturing of the perforation was not feasible on account of the inflammatory infiltration, a rubber drain was inserted in the cavity and the wound closed. Following establishment of drainage, the duodenal secretion poured forth and the skin around the drain became eroded, macerated and inflamed. The usual dressings were used with only slight relief.

We then tried a dressing of whole dried milk (commercial), using the dried milk because it contains the elements necessary to neutralize the ferments from the pancreas and intestine, namely, proteins, carbohydrates, and fats; because it is a powder and absorbs the secretion as it is poured out; and because there is no odor from the digestion of the dried milk. The results were startling. That night the patient had his first full night's sleep and the next morning the skin was greatly improved; long before the fistula closed, the erosions had healed and the skin had lost its tenderness.

The dressing consists of a layer of dried milk, about 0.5 centimeter in thickness, several layers of gauze, another layer of milk and, finally, the usual abdominal pad, and is renewed every four or six hours.

We have had equally good results with the use of this dressing in a case of lower intestinal fistula.

2001 Fourth Street.

"Peter Pan" Is Now a Gold Mine for a Children's Hospital.—What child has not seen Peter Pan either on the stage or in "the movies"? And now every time any child, young or old, pays for the delight of seeing that whimsical play of Sir James Barrie's, some of the money will go to help little sick children in London to get well again. For that beloved author has given over unconditionally to the Hospital for Sick Children in Great Ormond Street, all his rights to royalties from Peter Pan, a gift which it is estimated will add something like \$10,000 a year to the hospital's income. This generous action has already borne fruit, for "the first pirate" has anonymously given a pound note (nearly \$5) to the hospital, hoping that others might follow his example.—United States Department of Labor.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

PATHOLOGIST'S PRACTICAL AID TO THE SURGEON

D. Schuyler Pulford, Woodland.—A neoplasm responds most readily to treatment during its early stage. A clinical diagnosis at this time may be difficult or impossible. The importance, therefore, of a correct pathological tissue report is obvious.

Gross diagnosis has given way to microscopic examination. Dr. Verne Hunt, in an article published in this journal in 1925, quoted MacCarty as saying that of 47,434 surgical specimens removed at the Mayo Clinic, 18.2 per cent required microscopic diagnosis and, further, that 5.7 per cent of all surgical cases producing surgical specimens have tissue removed for diagnosis during operation and that microscopic examination of 2.65 per cent of all such specimens leads to a diagnosis which does not agree with the clinical or preoperative diagnosis. Of these cases, 60 per cent require a different surgical procedure as the result of the microscopic diagnosis.

Modern surgery requires that a microscopic diagnosis be given at the operating table by a pathologist trained in the rapid preparation and examination of fresh tissue.

Technique

The fresh tissue examination requires the cutting of sections by the freezing method. They may be fixed either by bringing to the boil with Muller's reagent or formalin before cutting and stained with H and E or Von Gieson, or cut unfixed and stained with polychrome methylene blue. Terry's modification of Unna's preparation is very satisfactory and gives instantaneous staining, and a good differential picture between chromatin material and connective tissue stroma.

Fresh Tissue Examinations Necessary

Since so many surgical procedures are dependent upon a microscopic diagnosis of excised tissue, the immediate examination of such tissue is indispensable, not only to the surgeon, but also to the patient. A conscientious physician or surgeon will not subject a patient to the danger and economic loss of two operations when one will suffice. Nor will he risk the spread of a malignant neoplasm through the delay necessitated in obtaining a fixed tissue diagnosis. Doctor Bloodgood puts this very well when he says: "Either we must make surgeons pathologists or bring the pathologist into the operating room and, in addition, whether the surgeon is the pathologist or the pathologist is present in the operating room, both must learn the necessity of studying these doubt-

ful tissues, unfixed and stained by the polychrome methylene blue method. For the past five years I compared this method with hematoxylineosin, fixed and unfixed with permanent paraffin and celloidin sections. I am confident that the diagnosis should be more certain when made from fresh unfixed tissue, frozen and stained with the polychrome methylene blue. In some instances it is helpful to have the sections stained with both and to use tissue both fresh and fixed by boiling in formalin. This method requires an unusual technician, but it is the only method which promises the solution of the diagnosis of doubtful cases when the diagnosis must be made at the exploratory incision. With a good technician and such trained pathologists, nothing is gained by delay. The only object of delay is to get the tissue to a better technician and a better pathologist. I therefore take this opportunity again to urge surgeons to begin now and provide in their operating rooms means, methods, and men to meet this new demand of tissue diagnosis, when treatment which promises the most for malignant disease can follow the moment this earlier recognition is made."

Pathologists, to be proficient in the diagnosis of fresh tissue, must be called frequently by the surgeons, for it is only after years of such study that a high degree of efficiency is reached. To have a small surgical pathology laboratory adjoining every operating room should be the aim of surgeon and pathologist alike.

Gross Diagnostic Efficiency

If a surgeon has an 80 per cent correct diagnostic acumen in the recognition of pathological tissue which he sees at the operating table, he is above the average. With practice and encouragement the fresh tissue pathologist can raise this percentage of correct diagnosis to from 95 to 98 per cent. From 2 to 5 per cent of specimens must be fixed for further study. Since the pathologist's efficiency is 15 to 18 per cent above that of the surgeon's he should be considered as a consultant rather than as a technician and should not be discarded if, for the sake of honesty, he is occasionally loath to commit himself. The surgeon should have sufficient knowledge of gross pathology to excise the proper specimen for examination. Inflammatory tissue often lies adjacent to a neoplasm and, if presented instead of the neoplastic growth, the true issue will be missed.

Help From the Surgical Pathologist

The function of the surgical pathologist reaches further than the mere diagnosis or naming of the pathological process. Through his observations of

the reaction in the tissues to malignant cells he may help the surgeon in estimating the patient's probable postoperative longevity. Lymphocytic infiltration, lattice fibers, fibrosis and hyalin are significant as natural defense processes against cancer.

Broders, his students, and followers, have proved beyond a doubt that the degree of cellular differentiation of a malignant tumor can be accurately measured and does roughly reflect the degree of potentiality of destruction of that tumor. The "grade" of a malignancy is not the whole story, but it is the most important chapter in a tumor's life history. The age of the patient, duration and size of the growth, glandular involvement and tissue reaction are all important factors to be taken into consideration in prognosis.

This determination of the degree of malignancy is mentioned in a discussion of surgical pathology because it can truly aid the tissue pathologists in helping the surgeon to determine the justifiable magnitude of an operation and in the standardization of the methods of treating malignant lesions. It also helps to collect data on the relative value of the various forms of treatment of malignancy.

As evidence that the grading of neoplasms is practical, we find Martsloff, independently of Broders, dividing the squamous cell epitheliomas of the cervix into grades of malignancy and, at last, even Ewing permitting such heresy to be preached in his laboratory.

Biopsy

A large percentage of the specimens presented to the surgical pathologist are from so-called biopsies. When possible we should follow the rule of "excision" rather than "incision," but, if necessary to make a diagnosis before subjecting a patient to a mutilating operation, it is permissible to cut into malignant tissue. The type of biopsy rather than the principle must be criticized. Take specimens with the electrocautery if possible. If not, use the knife and immediately cauterize with pure carbolic acid, followed by alcohol, or apply 50 per cent zinc chlorid with a saturated piece of gauze, as urged by Bloodgood.

The several problems associated with biopsies are well discussed by Doctor Bloodgood in his chairman's address before the section of surgery at the Atlanta meeting of the Southern Medical Association, November 1926. The consensus of opinion is in accord with his own. Some of his major conclusions are as follows:

1. Excise completely whenever a tumor can be removed without mutilation of or danger to vital organs or structures.
2. Incision must be done when a diagnosis of malignancy means an operation of greater magnitude than for a benign condition, especially if such a complete operation is mutilating or dangerous.
3. The best type of biopsy is one in which the tissue is exposed with thermal and chemical cauterization for protection and the diagnosis made

from an immediate frozen section, stained with polychrome methylene blue.

4. When the operator for any reason is not prepared or willing to proceed on the frozen section diagnosis in cases suggestive of malignancy, the wound should be packed with zinc chlorid sponges and the skin closed. This safely allows ample time for further microscopic consultation.

5. Cutting into malignant disease without chemical or thermal cauterization and a technique for the prevention of contamination of the wound with malignant tumor cells, certainly has an element of danger. It varies with different tumor tissues. The greater the interval of time between the exposure of the malignant tumor or biopsy, and its radical removal, the greater the danger.

6. In cancer of the lip and cancer of the extremities en bloc dissection of the local growth and glands is not essential and there may be an interval of time in the removal of a local growth and neighboring lymphatics.

7. The most difficult part of this new demand upon operators is the technique of the frozen section and its microscopic interpretation.

Summary

Modern surgeons require accurate microscopic fresh tissue diagnosis. The technique of the frozen section is perfected. The fresh tissue report is necessary to aid the surgeon in prognosis as well as in determining the justifiable magnitude of the operation; and biopsies, when necessary, are safe, if done in the proper manner.

* * *

Edwin I. Bartlett, San Francisco.—The public has the right to demand of the modern surgeon that he proceed with his surgical treatment on the basis of a positive diagnosis. The surgeon, on the other hand, has the right to expect from the hospital where he operates adequate laboratory assistance. This very often means the making of frozen sections. All properly equipped hospitals should have, not only a laboratory, but a pathologist versed in all of the frozen section procedures and in the interpretation of the microscopic picture. Very few surgeons have had the advantage of training in frozen section diagnosis and, therefore, must rely upon someone else for the interpretation of the gross picture and the microscopic sections.

If the surgeon or the hospital fails to measure up to the modern standards the patient suffers. In the case of malignant disease an operation by an unqualified surgeon or by a qualified surgeon without laboratory equipment may mean the loss of the patient's life. For many years it has been known and broadcast that a two-stage operation, for instance in cancer of the breast, is almost universally fatal. The delay of several hours to a few days between the local removal of the tumor for the purpose of the pathological examination in some distant laboratory, and the complete breast operation following the report from the

pathologist, means that chances of a cure have been reduced to 10 per cent, no matter how early the disease. On the other hand this same patient in the very early stages of the disease may have at worst 80 per cent chances of a cure with the one-stage operation. Our only hope of avoiding tragedy from two-stage operations is the one-stage operation made possible by frozen section diagnosis while the patient is asleep on the table under the primary anesthetic.

The method used in frozen section diagnosis is immaterial provided the pathologist or surgeon is able correctly to interpret the prepared section. The technique used should be the one which allows the pathologist or surgeon the highest percentage of correct diagnoses. Some individuals can best interpret unfixed material stained with polychrome methylene blue. Others have difficulty with this method and find a two-stain fixed tissue technique preferable. It has been my experience that one method is as reliable as the other and in all other ways is as satisfactory provided the interpreter of the sections is thoroughly familiar with that procedure.

* * *

W. T. Cummins, San Francisco.—The equipment for the preparation of frozen sections constitutes an important part of a hospital laboratory. It is necessary that the pathologist have adequate training in the interpretation of so-called surgico-pathologic histology. Either he or one of his specially trained assistants shall be prepared for the reception of the biopsy specimen. Of the several recognized techniques there seems to be no universally popular one. The method of choice is the one to which the pathologist is accustomed. The writer prefers hot formalin fixation and hematoxylin and eosin staining, for purposes of superior cellular differentiation. Later, sections are prepared by the slower paraffin technique for comparative purposes.

It is unfortunate that there is not a larger percentage of surgeons who appreciate the value of the one-stage operation in suspected malignancies. We must realize that the manipulation of malignant tissues by the removal of a segment with a material delay in the removal of the remainder, may spell disaster to the patient. Local metastases and distant embolisms are facilitated thereby. The earliest diagnosis is none too early. The layman is prone to postpone his visit to the surgeon and the condition at the time of the first visit may be advanced.

Aside from the study of the biopsy specimen, the pathologist contributes also materially to the assistance of the surgeon by the routine and painstaking examination of all tissues removed at operation. In the larger hospitals each day the laboratory receives appendices, tonsils, gall bladders, ovaries, etc. Some specimens have not been incised. Not rarely a gross examination, and subsequent histologic, has revealed a hitherto un-

discovered pathology that is of material assistance to the surgeon.

The day has arrived when the pathologist has added to his postmortem pathology the mental and mechanical equipment for the study of living pathology. How essential this is in our efforts to reduce the morbidity and mortality of disease!

The Antioch Shoe.—Antioch College, practical as always in its research contributions, noted that Antioch girls in many cases became seriously fatigued and with lowered efficiency under the normal strain of productive living during the five-week period of co-operative employment. In a number of cases the cause was traced to bad posture and further to improperly designed shoes.

It was found, on investigation, that foot troubles from faulty shoes were on the increase because of the difficulty for women and girls of finding an attractive shoe which would keep the normal foot from serious harm. All available shoes were rejected either by the girls themselves or by the group of medical experts who were put to work on the problem.

Studies were then made with the planning of a prophylactic as opposed to a corrective shoe as their objective, and the following essentials of construction were found necessary:

1. Sufficient width across the ball to permit the metatarsals to carry the body weight without lateral crowding.
2. Width across the toes to prevent crowded toes, etc.
3. Ample length over all, to prevent jammed toes.
4. Broad, low shank, with heels no higher than one and one-half inches to restrict the amount of weight thrown on the metatarsal heads, and to contribute to body balance and poise.
5. Semiflexible shank, rigid to a point about one and one-fourth inches ahead of the heel front, fully flexible beyond. This supports the foot when at rest, but provides flexibility when walking.
6. Broad heel seat to allow for expansion, and narrow at the top to prevent the heel from slipping and to insure a snug fit at the ankle.
7. Moderately straight inner line to permit proper toe position.
8. Instep on the inside higher than on the outside, conforming to the true shape of the average foot.
9. Attractive patterns and leathers to interest the feminine eye.

Anyone interested in correct shoe fitting will find of value the pamphlet issued by Antioch College on this subject, giving the results of its investigation.—*The New England Journal of Medicine*, April 1921.

"Youth."—"Youth is not a time of life—it is a state of mind. It is a temper of the will, a quality of the imagination, a vigor of the emotions. It is a freshness of the deep springs of life. Youth means a predominance of courage over timidity, of the appetite for work over love of ease. This often exists in a man of fifty more than in a boy of twenty. Nobody grows old by merely living a number of years. People grow old by deserting their ideals.

"Whether seventy or sixteen, there is in every being's heart the love of wonder, the amazement at the stars and the starlike things and thoughts, the undaunted challenge of events, the unfailing childlike appetite for what next, and the joy and the game of life. You are as young as your faith, as old as your doubt; as young as your self-confidence, as old as your fear; as young as your hope, as old as your despair. So long as you receive messages of beauty, hope, cheer, grandeur, courage, and power from earth, from men, and from the infinite, so long are you young."—*International Paper Monthly*.

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Leaflet Regarding Rules of Publication.—California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

tion, at that time of its own reorganization, urged state medical societies to use.

* * *

The Constitution and By-Laws Which Were Repealed.—With the passing of years, those rules of organization were modified until the form printed in the August 1927 issue of CALIFORNIA AND WESTERN MEDICINE (page 244) came into existence. It was that constitution and its by-laws which was repealed last month.

* * *

The Basis of the New Constitution and By-Laws.—The constitution and by-laws adopted at San Diego this year was based on a model constitution and by-laws for state medical societies brought out by the American Medical Association in 1925. The changes from the American Medical Association model represented some deletions, and also the incorporation of certain changes which the original committee of nine on revision, appointed in 1926 by the chairman of the Council of the California Medical Association, thought it wise to include, to better adapt it to California needs.

Prior to the 1928 annual session of the California Medical Association at Sacramento, a second proposed constitution and by-laws was presented by some members of the Council. Both revisions were printed in the August 1927 issue of CALIFORNIA AND WESTERN MEDICINE, the appointed committee's draft being on page 248, and the volunteer committee's draft on page 255. At Sacramento the further study of revision was given over to a new committee of three, that committee bringing in a report to the Council last fall which, with minor modifications, was in favor of the revised draft of the appointed committee of nine. That draft was printed and distributed to the members of the House of Delegates at Sacramento, but was not reprinted in CALIFORNIA AND WESTERN MEDICINE.

At San Diego the Council placed the final report of the Sacramento committee of three in the hands of a new committee of three, which in an almost continuous three-day session, worked over the rules, having the same printed and distributed to the members of the House of Delegates prior to its second meeting on May 8. After this final revision the members of the reference committee also went over the constitution and by-laws line by line; and three or four other members who had been on previous committees also aided the final revision committee. This record of the events leading up to the final adoption of these new rules is here given, so that every member of the Association may be made acquainted with the fact that the fullest possible discussion of all phases of the new constitution and by-laws was had by representatives of the profession from all parts of California.

* * *

The Particular Objects Aimed at in the Revision.—It is believed by those who have had a large experience in medical organization work

EDITORIALS

NEW CONSTITUTION AND BY-LAWS ADOPTED AT SAN DIEGO

Action of the San Diego Session.—The much discussed revision of the Constitution and By-Laws of the California Medical Association, which has been pending for some four years, is now a feat accomplished. The final adoption, while much a surprise to many members, was also very much to the satisfaction of those colleagues who have been interested in a revision of the rules of procedure which form the basis of organization of the California Medical Association. The proposed revision was adopted on May 8, without a single dissenting vote in the House of Delegates, at the fifty-eighth annual session of the California Medical Association at San Diego.

* * *

Reorganization Constitution Which Was Adopted Twenty-five Years Ago.—The Twenty-Five Years Ago column of this issue of CALIFORNIA AND WESTERN MEDICINE contains an item which records the adoption of a constitution and by-laws by the California Medical Association, our State Association at that time being known under the name of The Medical Society of the State of California. The rules which were then adopted were a modification of a model constitution and by-laws which the American Medical Associa-

that these new rules for the better government of the California Medical Association will give our state medical association a highly centralized authority, but at the same time an elastic form of government. Through the new rules it is hoped to bring to its executive and administrative officers a large group of experienced colleagues, whose knowledge and experience should aid in the solution of the many scientific and organization problems of the California Medical Association.

* * *

New Constitution and By-Laws Will Be Printed in the July Issue.—The new constitution and by-laws will be printed in the July issue of CALIFORNIA AND WESTERN MEDICINE. Reprints will be sent to component county societies. Officers and members of component county societies are urged to look over these new rules of government, which will be so printed and indexed that the various items will be more easily understood than is usually the case when material of this kind is huddled together in compact, inadequately paragraphed and uninviting fashion.

Certain innovations in the new rules will be discussed separately in this and future issues of CALIFORNIA AND WESTERN MEDICINE. Some brief comments on a few of the major changes at this time may be of interest. Among such changes are those noted in the paragraphs which follow.

* * *

Some of the Special Changes in the New Constitution and By-Laws.—It is stipulated that the fundamental organization of the California Medical Association comprehends three major elements: one, the Association as a whole, and which, at an annual session, is represented in a general business meeting; two, the Scientific Assembly, which includes all general and section scientific meetings; and three, the House of Delegates, and its subordinate bodies, acting as the business agents of the Association.

Our membership hereafter will consist of active, associate, retired and honorary members.

The complexion of the House of Delegates remains the same. The basis of representation for component county societies is one delegate for each fifty members or any fraction thereof. It was formerly stated to be a "major" fraction thereof. As heretofore every component county society will be given at least one delegate, even though it have less than fifty active members.

A presiding officer of the House of Delegates, who will be known as the *speaker*, is added to the list of officers who have a seat in the Council. The *editor* and *secretary-treasurer* each become members of the Council, but are not given the right to vote in the Council. The House of Delegates also elects a *vice-speaker*, who, however, has no membership in the Council.

The nine district and six at-large *councilors* remain as before. In this connection the House

of Delegates ratified the *redistricting* of the councilor districts as proposed by the Council.

The election of *district councilors* will hereafter be initiated through nominations made in caucuses of the delegates from each councilor district.

As regards publications, in addition to CALIFORNIA AND WESTERN MEDICINE, which is the official journal, and the annual directory, a third publication to be known as the Pre-Convention Bulletin is brought into being. In this new publication will appear reports of officers and committees; and through its subject-matter it is hoped to aid members of the House of Delegates to have a better perspective of Association activities when they are called upon to act as the business agents of the State Association at an annual session.

The incorporation clause prepared by the general counsel of the Association is modeled after the form which was prepared by him for the San Francisco County Society; and if put into being will permit the Association to look forward to donations, bequests, and legacies that could materially add to the prestige of the California Medical Association by giving it the means and capacity for greater work and service.

The details of membership rights and privileges are very thoroughly covered in the new by-laws.

Credentials of delegates will be scrutinized by a new committee on credentials, as in the House of Delegates of the American Medical Association. Delegates who do not attend or give satisfactory excuses cannot be reelected as delegates until two years have elapsed.

Instead of one reference committee, as in the past, there will now be two: one for reports of officers and committees, the other for new and miscellaneous business.

An annual budget to be submitted by the Council to the House of Delegates is provided for.

In order to do away as much as possible with special committees, which so often function in most irregular fashion, some eleven standing committees comprehending practically all of the major activities of the Association are authorized. Each of these committees consists of an executive group of three members, one member being elected each year for a three-year term, the committee electing its own chairman and having the right to appoint from two to ten advisory members to aid it in its work. Every committee must print its annual report on work covered, in the Pre-Convention Bulletin, or be stigmatized with the legend, "No report rendered." It is hoped through these committees to add a large group of workers to the administrative corps of the Association. One member of the Council is on each committee to act as a liaison member with the central office of the Association.

* * *

Why Members are Urged to Read the New Constitution and By-Laws.—The above notations

cover most of the modifications and innovations in the new rules. Members are urged to read the new constitution and by-laws when they appear in the July issue of this journal. It cannot be too often stated that if it were not for our national, our state and our county medical organizations, the onslaught on scientific medicine from commercialistic and faddist sources would be so numerous and powerful that much of the joy of service, as well as those decent rewards which go with good service, would be taken from the majority of doctors of medicine. Such a calamity would make for a deterioration of our profession and its standards, and would mean a grave menace to public health interests and to the welfare of our country.

Organization in medicine, therefore, is a something which concerns every one of us who is in practice, no matter what our supposed professional rank may be, and no matter whether we acknowledge interest in medical organization work or not. If we do acknowledge the importance of medical organization to our personal and to our group professional interests, then it behooves each of us to have an intelligent understanding of the methods of government in our national, state and county medical societies. The reading of a constitution and by-laws, even though at first thought a most dry and uninviting duty, can become a study of live and pertinent interest if we approach it in a proper attitude of mind. For through a better understanding of the objects of organization, we are far more apt, each of us, to accept the responsibilities which fall on us; and each of us will be more willing to do his full part in maintaining the standards of scientific and non-sectarian medicine.

* * *

Proposed Referendum on Incorporation.—In this connection, and as an expression of alertness to this responsibility, every member of the California Medical Association is urgently requested to promptly send in his vote when the referendum on the incorporation of the California Medical Association is later sent out to the members. To comply thoroughly with the corporation laws of California, in relation to organizations such as our State Association, the vote of the members should be a matter of record. The House of Delegates at San Diego, without a single dissenting vote, took action in favor of incorporation. It is hoped that a somewhat similar unanimity will be shown when the vote is taken at large. Let every member coöperate and vote promptly when the referendum vote slips and envelope are sent him. These slips will probably go into the mails shortly after the appearance of the July issue of this journal, in which the referendum will be further discussed. By voting promptly at that time the work of reorganization will be expedited and the way be paved for a greater future for the California Medical Association, a something to which each of us is pledged.

THE FIFTY-EIGHTH ANNUAL SESSION AT CORONADO-SAN DIEGO

Thanks of the Association to San Diego Colleagues.—To the members of the San Diego County Medical Association, individually and collectively, go the thanks of the California Medical Association and especially of those of its members who were so fortunate to be present and take part in the scientific and entertainment features which were provided.

The program of this fifty-eighth annual session which was printed in the May issue of CALIFORNIA AND WESTERN MEDICINE, was an indication of the interesting experience which was to be offered to all those who traveled south to the border of Old Mexico, to become the guests of our San Diego colleagues. Excellent as the preliminary program appeared, it was outdone in actual performance. The California Medical Association may be said to be a stronger state unit because of this session, for the general meetings and those of the scientific sections measured up to a high standard.

* * *

Appreciation of the Guest Speakers.—Our Association expresses its deep appreciation to the guest speakers from other states, whose presence and contributions aided in making the session at Coronado such a success. The kindly, informal address of greeting to the House of Delegates by President William S. Thayer of the American Medical Association, in which he brought the good wishes of our national organization to our state unit, was much enjoyed, and his generous sentiments were fully reciprocated. The presence of these prominent colleagues from other portions of our country was not only a personal inspiration, but an incentive to increased endeavor on behalf of organized medicine. These busy colleagues were willing to leave their many home duties and responsibilities, at considerable cost in time and convenience, to bring to the members of the California Medical Association their messages of good will, and of viewpoints on problems of medical and scientific interest. They demonstrated by the same their belief in the value of organization to the medical profession. That these colleagues from afar off were willing to do this for us, should make those of us who are at times a bit laggard in making an effort to attend medical meetings resolve to do a wee bit better in the future.

* * *

Scientific and Entertainment Features of High Standard.—The worth of the scientific papers which were read, and the diversified and acceptable program of entertainment which was constantly presented, it is not possible to here discuss in detail. The pages of this journal during the coming year will bring to its readers the printed expression of the scientific contributions. Returning members from the session will spread by word of mouth the glad tidings of the good times which

were enjoyed through the entertainment features provided by the San Diego County Medical Society.

Excellent Innovation in Time Allotments in Program.—One outstanding change which was put to the test at Coronado was the plan submitted to the Council by the San Diego committee of arrangements, in which it was recommended that the scientific meetings of the session all begin promptly at nine o'clock, with prompt adjournment at one o'clock; to be followed by luncheon, the remainder of the afternoons to be given over to entertainment. It is gratifying to record that this plan worked out in splendid fashion. The meetings of the scientific sections moved forward with as much alertness and profit as at any time in the past when morning and afternoon meetings were the vogue. In addition, visiting members and their ladies were able to far more easily take part in the good fellowship features which were provided in the entertainment program.

It is hoped this innovation in procedure will be carried out in the future. The knowledge that the sections will adjourn promptly at one o'clock will be a stimulus to section officers and members to call their meetings to order promptly, to hold essayists and discussers down to the time allotments and other rules provided in the by-laws of the Association; and by transacting section proceedings in businesslike fashion will make for increasingly good scientific programs.

The success of this plan of procedure was so marked that the wonder is that it had never been tried out before. Evidently in our past endeavors to be thoroughly instructive to one another we became parties to meeting methods that consumed time somewhat out of proportion to the good to be accomplished. At any rate, in the future it is probable that an increasing number of members will stand firm for the plan of intensive application to the scientific programs in the mornings, and equally intensive effort in the entertainment features for each afternoon. It stands to reason that if the scientific aims of our State Association can be adequately served by such a time allotment that the interests of organized medicine will be promoted through the personal contacts made possible in daily afternoon entertainment programs. Those members who were present at San Diego seemed unanimously in favor of the new plan. Properly carried out, it should, year by year, make for an extra large attendance at our annual sessions.

Thanks to Retiring, and Greetings to New Officers.—Some words of greeting for services rendered by retiring officers may well have a place here. The California Medical Association is appreciative of the services of all its retiring executive and other representatives, from retiring President William H. Kiger down, who during the last twelve months have given generously of their best in order to aid the California Medical Association.

It welcomes its new president, Morton R. Gibbons, of San Francisco, with feelings of special regard and kindly wishes, because of the part which his grandfather, Henry Gibbons, as president of our State Association in 1857 and again in 1872, his great-uncle, William P. Gibbons, as our president in 1886, and his father, Henry Gibbons, Jr., in 1897, also as president of our State Association, played in the development of organized medicine in California. His is a unique professional lineage, and one that would probably be most difficult to duplicate, even in state medical associations east of the Mississippi, where the history of organized medicine goes back to an earlier period than in California. We are all of us proud that in his family, in which there have been disciples of Aesculapius in different generations, that his forbears should have all been imbued with a high sense of obligation to serve in broad manner the best interests of the profession to which they had allied themselves.

To our new president-elect, Lyell C. Kinney, of San Diego, the hand of good fellowship is also extended. His service on the Council as the representative of the First Councilor District has long acquainted his fellow officers with his merits. The manner in which he directed the recent San Diego meeting arrangements is a further indication of his executive capacity. His professional worth brought to him the generous support of colleagues in San Diego and elsewhere who were familiar with his work. To him and other newly elected councilors and officers the Association extends its greetings and good wishes.

FORTY-EIGHTH CALIFORNIA LEGISLATURE—FINIS

General Record of the Forty-Eighth California Legislature.—On May 15 the Forty-Eighth California Legislature adjourned, after a ninety-nine-day session, one of the longest sessions of recent years. In common with other organizations, the members of the California Medical Association may now pause to make note of the constructive or destructive results on certain proposed public health legislation.

Thirty-eight state senators introduced 890 bills or proposed laws, 45 constitutional amendments, 41 concurrent resolutions, and 15 joint amendments. Eighty state assemblymen introduced 1196 bills, 39 constitutional amendments, 48 concurrent resolutions, and 22 joint resolutions. Of the grand total of more than 2000 bills which were introduced by senators and assemblymen, a total of 1110 went on to passage. The ninety-nine-day session of the legislators cost California, in legislative expenses, the sum of \$536,482.04.

Public Health Bills Before the Legislature.—The March number of CALIFORNIA AND WESTERN MEDICINE, pages 211-215, gave a summary of the numerous public health measures which had been introduced up to that time, and this column of the journal in the last several issues has discussed in detail several of the proposed measures

in which members of the California Medical Association had a special interest.

Among such were the Vocational Standards Bill, the State Medical Library Bill, the Basic Science Bill, the Nurses' Bills, the Lien Bills, and several measures having to do with amendments to the Medical Practice Act, and with expert medical testimony and the care of mental patients. Of these the Vocational Standards Bill went on to passage, and several of the amendments to the Medical Practice Act were also adopted. Most of the others went down to defeat.

* * *

Value of Analyzing What Happened.—Since experience is the best teacher, it should profit us somewhat, and make for better things at future sessions of the legislature if we stop and analyze some of the situations which arose. In that way some of our mistakes of judgment or procedure may be avoided two years hence, when the next legislature convenes, at which time our Association will be confronted again with the same avalanche of public health measures coming from out of the great unknown. At that time, just as has always been the case in the past, it may be taken for granted that in attempting to secure favorable legislative and gubernatorial approval of the few bills for which we will probably be the sponsors, we will be met with intriguing forces such as nullified some of our efforts in the present session.

* * *

Vocational Standards Department.—The bill creating this new state department has been quite fully discussed in this column. As originally drawn by the representatives of the administration, it was far from acceptable. Had the administration forces not consented to make modifications acceptable to the medical profession, the Council and Executive Committee of the California Medical Association were prepared to push through a program to have the members of the dental and pharmaceutical professions join with that of medicine in an effort to defeat the measure. The principle at stake was that the examining boards of these three professions should not have their standards or rights endangered by possible future action of a department head or director, who could be under the domination of political forces having little or no interest in the maintenance of standards, as the members of the professions of medicine, dentistry, and pharmacy understood these standards.

As regards this measure, the members of the California Board of Medical Examiners, being appointees of the present and former governors, were at a political disadvantage. Their battle was therefore taken over by the California Medical Association, whose members look upon the members of the state examining board as custodians or trustees to maintain the professional standards to which this Association subscribes.

Little more need be said of this Vocational Standards Bill. It passed in both Senate and Assembly and, having been signed by the Governor,

will shortly take its place among our California laws. The officers of the California Medical Association and its component county medical societies will, of course, remain vigilant and be on guard to prevent any steps which would imperil professional standards.

* * *

The Basic Science Bill.—In previous issues were given the reasons why the Council and Executive Committee felt that this bill might well lie over for further study. The minutes of the House of Delegates, printed in the California Medical Association Department of this issue, contain a resolution introduced by instruction from the Council, approved by the Reference Committee, and ratified by the House of Delegates, which provides for a thorough study of both the Medical Practice Act of California and of a possible basic science law; so that steps may be taken in ample time to secure the passage of the same, if it be so decided, by either legislative or initiative procedure, according as future conclusions may indicate to be best. These important topics will be discussed in future issues of CALIFORNIA AND WESTERN MEDICINE. In the meantime any component county societies or members having suggestions thereon are urged to feel free to send their viewpoints to the central office of the Association.

* * *

The State Medical Library Bill.—The officers of the California Medical Association were of the opinion that a state medical library at Sacramento could be made to be a powerful factor in the maintenance of the standards of scientific medicine in California. This measure, which would have brought such a library into existence, became known as Senate Bill No. 842. This library bill died in the Assembly Committee on Governmental Efficiency and Economy.

Some comments on the difficulties which this bill encountered were here inserted, but, on further consideration, have been deleted. The career of the library bill will therefore be only briefly sketched at this time in this column.

* * *

The Official Record of Senate Bill No. 842.—The past history of the bill can be best gleaned by quoting from the *Senate Weekly History* of Friday, May 10, 1929. From this we quote:

842—Canepa, March 14—To Committee on Governmental Efficiency. An act to create a state medical library, to provide for the establishment and maintenance of said library as a part of the state library, to transfer and to set over to the State Medical Library Fund certain moneys.

March 14—Read first time. To printer.

March 15—From printer. To committee.

March 28—From committee with recommendation: Be amended, and be re-referred to Committee on Governmental Efficiency.

March 29—Read second time. Amended. To printer. From printer. Re-referred to Committee on Governmental Efficiency.

April 26—From committee with recommendation: Do pass.

April 29—Read second time. To engrossment, and third reading.

May 1—Reported correctly engrossed.

May 2—Read third time, passed, title approved. To Assembly.

May 10—in Assembly. Read first time. To Committee on Governmental Efficiency and Economy. From committee with recommendation: Do pass.

From the above it is noted that the state medical library bill was introduced on March 14, that it was successful in passage through the Senate on May 2, and that it died in the Assembly Committee on Governmental Efficiency on May 15, the date of adjournment of the legislature.

* * *

The California Medical Association's Proposal of a State Medical Library.—A state medical library was first broached in an editorial in the November issue of CALIFORNIA AND WESTERN MEDICINE and received the favorable vote of the Council and Executive Committee of the California Medical Association. Unfortunately the bill, as introduced in January and known as Assembly Bill No. 488, was written as an amendment to the State Medical Practice Act, instead of in the form outlined in the November editorial. As a consequence it was necessary to let that bill die, and to introduce a new bill as Senate Bill No. 842, in the second portion of the session. That delay was a serious handicap.

Nevertheless, the measure was pushed through the Senate, was referred to the Assembly, but in the legislative jam following the Judge Hardy impeachment proceedings, was hard to get out of committee for final action by the Assembly. The bill died in committee. That is the story.

* * *

The Library Bill Had the Official Endorsement of the California Medical Association.—The state medical library bill had the practically unanimous support of the Council and of the Executive and Legislative Committees of the California Medical Association. Component county medical societies were also in favor thereof. At the fifty-eighth annual session at San Diego the Association, through its House of Delegates, unanimously voted that a telegram of endorsement of the measure be sent to every assemblyman. That was done on Monday, May 6, or nine days before the legislature adjourned.

All of which means that the California Medical Association, an organization of almost five thousand licensed practitioners, whose members, through annual state occupation or license fees against themselves, had helped accumulate a big reserve fund to the credit of the California State Board of Medical Examiners, through its official bodies and itself in annual convention assembled, had endorsed and had gone on record in favor of having S. B. No. 842 become a law.

In spite of this, S. B. No. 842 did not go on to passage. Instead, it went down to defeat.

* * *

The Library Bill Will Reappear at the Next Legislature.—More might be written concerning this bill, which ran through the whole range of

permissible mistakes, as well as of under-cover opposition, which so frequently are encountered during legislative sessions.

The consolation for the moment is that no immediate great harm has been done. During the next two years the bill can be gone over and a firmer foundation laid for its passage. The money will still be in the reserve fund of the California State Board of Medical Examiners. Coming as that money did, from a special extra tax on doctors who pay all other taxes, and being levied for special purposes—the maintenance of medical standards—it must be used for those purposes. Doctor Pinkham's letter, printed in the Miscellany Department, tells of the major sources of this reserve fund.

This money, in the maintenance of professional standards, could be used to good advantage to establish a state medical library. That library should be at Sacramento, the seat of government of California, and no medical school or schools should look at these funds with envious eyes. A state medical library administered in the broadest, nonsectarian manner possible, to which every doctor of medicine in California could turn without the least hesitation, is what is desired. Any attempt to directly or indirectly divert the funds, no matter by whom sponsored, is almost certain to meet with very considerable opposition.

For the time being, the component county societies can profit from this and similar legislative experiences and, through proper committees, be on the alert when the primaries and final elections of assemblymen and senators and other state officers take place two years hence. With proper forethought and judgment, and with righteous causes, and with wise committees on legislation and public policy, the California Medical Association should and will be able to safeguard the rights of its members and the public health. All that is needed is to organize our forces and influences, and then speak and act in the language which candidates for public office so well understand.

Recognizing Active Tuberculosis in Its Early Stages.—Speaking of the early recognition of pulmonary tuberculosis, and especially urging that the possibility of active tuberculosis be not dismissed because the patient appears well nourished and vigorous and has no elevation of temperature, Krause says:

"Notwithstanding our long strides in the century since Bayle, we are now and again impressed with the traces of the old point of view that remain today—to the great detriment of good diagnosis in tuberculosis; only now attention is centered on body temperature. And, just as we so frequently read of patients under treatment having their classification changed to quiescent, or arrested, or inactive, upon the return of temperature to normal, and ostensibly on this basis alone, so we find numbers of physicians apparently unable to comprehend tuberculosis as active unless and until the temperature is elevated. It will mark a great advance in diagnosis when the generality of medical men give up the idea that elevation of temperature is the chief and most significant symptom of pulmonary tuberculosis or the *sine qua non* of activity.—*City of New York Department of Health Weekly Bulletin*, April 1929.

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members.

Dermatology

Yeast Fungi.—The general family of yeast-like fungi, which are included in the genus *Blastomycoides*, are responsible for several definitely surgical conditions. These are usually recognized as of mycotic origin only by cultural methods as done by experts. For instance, Castellani cites a case of severe and continuous furunculosis, in which ordinary cultures disclosed only *Staphylococcus aureus*, but cultural methods calculated to determine the presence of *Blastomycosis*, finally, with difficulty, were successful.

There are other infections which, clinically, have no resemblance to typical *Blastomycosis* of the type which, when present, raise roundish or oval patches with a verrucous or papillomatous surface, but which, by cultural methods, are definitely established as being basically caused by some member of the *Blastomycosis* family.

The clinical entities, which are included in the general term of *Blastomycosis*, were formerly limited to the typical Gilchrist type which usually, at first, affects the skin. Verrucoid lesions are the essential characteristic. In later stages the internal organs may be attacked or multiple abscesses may exist or discharge through sinuses.

Coccidioides, from a clinical point of view, is separate from the Gilchrist type of *Blastomycosis* and is often mistaken for some simpler surgical condition which is not cured by ordinary surgical methods. Biologically it is definitely a member of the *Blastomycosis* family, and by some authorities is technically named *Blastomycosis ulcerativa profunda*.

The forms of *Blastomycosis* which are found in lesions which, from a clinical point of view are boils or carbuncles, are not as a rule classified as *Blastomycosis* by clinicians. Biologically it is well for a surgeon to know that a stubborn boil or series of boils or a stubborn carbuncle can possibly be caused by a yeast-like fungus. Even a stubborn crusty impetigo lesion can be due to the *Blastomycetia pyosis*, which is biologically a *Blastomycosis*, but clinically the lesion would never be so classified. Another form due to a different variety of the genus is a paronychia, which at times comes to suppuration, but sometimes remains painful and inflamed for months without any suppuration.

Still further down the line of clinical severity and beyond the limits of surgical classification, the clinical and biological varieties run parallel. That is, each clinical variety, within certain limits, has a definite biological genus as its causative factor, and each genus has some definite cultural characteristic.

IRVING BANCROFT, Los Angeles.

Urology

Urography.—The urologist relies to such an extent on roentgenography as a diagnostic aid that the degree of perfection which urological diagnosis has attained would have been impossible without this aid. The interrelation has become so fixed that the term "urography" is used to denote radiography of the urinary organs or, in a narrower sense, the rendering of the urinary tract opaque by the injection of liquid which casts a shadow in the radiograph.

The pyeloureterogram, which is obtained after injecting 12 per cent sodium iodid or other opaque solution into the renal pelvis and ureter through the ureteral catheter, shows the outline of the pelvis and ureter. The important pathologic conditions in which such a urogram is an aid to diagnosis are:

1. *Renal or Ureteral Stone.*—If a shadow demonstrated in a previous radiograph and simulating a renal or ureteral stone is not included in the outline of the pyeloureterogram, and is not near enough to the pyelogram to be in the kidney parenchyma, it is interpreted as not being a urinary calculus. Every urologist has seen patients who have been operated on for a supposed stone in the ureter or kidney when there was no stone there. In practically every one of these cases a preoperative pyeloureterogram would have demonstrated the suspected shadow to have been outside the urinary tract.

2. *Dilatation from Obstruction.*—The ureter and the kidney pelvis and calices show a dilatation regular in outline, with a corresponding thinning of the renal parenchyma. The normal cupping of the terminal irregularities of the minor calices is obliterated. This obliteration occurs in most pathologic deformities of the renal pelvis. The etiology—ptosis, ureteral kink or stricture, or other cause of the hydronephrosis—is also frequently demonstrated by the pyeloureterogram.

3. *Deformity from Inflammation.*—Inflammatory dilatation is characterized by a more irregular, moth-eaten outline, and the function of such a pyonephrotic kidney can be estimated by the amount of destruction of renal tissue shown in the pyelogram. Sometimes a kidney with a long-standing chronic infection will show an encroachment on the calices and pelvis, by the cicatrix which forms after the destruction of the kidney tissue.

4. *Deformity from Tumor.*—Neoplasm such as hypernephroma or carcinoma gives the characteristic "spider leg" deformity—a lengthening and narrowing of the pelvis and calices—if the cortex is involved; or a partial or complete obliteration of the calices and pelvis if the origin of the tumor is in or near the pelvis. Polycystic

kidney shows encroachment in the form of multiple concave outlines in the pelvis and calices.

The cystogram, which is obtained after filling the bladder with an x-ray opaque solution such as 10 per cent neosilvol, is used principally for demonstrating the size, shape, and position of a diverticulum. It also aids in the diagnosis of conditions such as bladder tumors, bladder neck obstruction, and cord bladders.

The reader is referred to two recent most excellent works on the subject by Braasch¹ and by Young and Waters.²

Summary.—Urography, or radiography of the urinary tract is an invaluable asset to urologic diagnosis. A urogram should be taken on every case in which the diagnosis is in doubt. By doing this many mistaken diagnoses and many unnecessary operations will be avoided.

ROGER W. BARNEs, Los Angeles.

REFERENCES

1. Braasch, W. H.: Urography, 1927 ed., W. B. Saunders Company.
2. Young, H. H., and Waters, C. A.: Urological Radiology.

Orthopedics

Indications for Natural Heliotherapy.—The physiological effects and the modes of application of sun-air therapy have been frequently described in medical and lay literature. The indications of heliotherapy may briefly be outlined as follows:

The indications for solar radiation cannot be laid down by enumerating individual diseases. Heliotherapy should find application where, from theoretical consideration and from practical experience, it can be regarded and has proven to be beneficial and effective. The claim of the healing power of solar radiation in so-called surgical tuberculosis is at present admitted by the highest medical authorities. The controversy between those who advocate operative interference and the group who favor conservative sun-air treatment in surgical tuberculous lesions still goes on. The adherents to the radical procedures, however, admit that heliotherapy is beneficial during the period of postoperative convalescence or as a preparatory measure to raise the body resistance to build up the patient's general condition. Surgery in an individual, especially in young persons in poor general condition with the disease in an active stage, is but infrequently performed even by the most radical advocates of the scalpel. To increase resistance, strengthen musculature and tonicity, nothing equals systematic heliotherapy. Preoperative solar therapy may prove beneficial beyond expectation so that a contemplated operation may no longer be necessary. The contention of men like Freiberg, Meyer, and a score of other writers, that surgery and heliotherapy have each their special indications, must be accepted as true. Each procedure must be administered, not to exclude, but to supplement the other.

Sun radiation has been proven of inestimable value in calcium deficiencies such as rickets, osteomalacia and delayed union of fractures, the healing of which is enhanced by the rise of the con-

stitutional resistance; also in localized conditions such as wounds of various types, severe traumatization of soft tissues, ulcerations due to circulatory or neurotrophic disturbance and infected wounds. Greatly benefited are many pathological manifestations which are the outcome of systemic infection. Here may be mentioned chronic osteomyelitis, chronic arthritis, and lesions of syphilis refractory to specific treatment. In orthopedic practice heliotherapy finds indication in the deficiency diseases of the type of Osgood-Schlatter, Legg-Perthe, Freiberg, Koehler, and other conditions classed as osteochondritis, as well as in tuberculous bone and joint affections and in chronic arthritis. Also in myasthenia, muscle atrophy, and paralysis, has the muscle-building effect of the sun ray been of real value.

The sun-air therapy must not be regarded as a specific but rather as an activating agent, as a generalized therapy. Its administration must be based upon the assumption that the local lesion is but a manifestation of a constitutional disease or deficiency. On the basis of this assumption, heliotherapy may well be adopted as an adjunct to other recognized methods of treatment.

A. GOTTLIEB, Los Angeles.

Bacteriology

The Newer Immunochemistry.—The older immunophysiology was based largely on the assumption that an injected antigen stimulates the multiplication and desquamation of a hypothetical corresponding specific antibody or side-chain, with which the fixed tissues were assumed to be miraculously endowed. The trend of the newer immunology is admirably illustrated by recent studies by Kryshanowski of the Bacteriological Institute, Department of Health, Ufa, Russia.¹

Director Kryshanowski confirms the previous conclusions of Walbum² that the living diphtheria bacillus does not secrete a preformed toxin. The toxin of current nomenclature is a secondary product, formed by some unknown chemical reaction between a nontoxic bacterial product ("protoxin") and the surrounding medium. He finds that *in vitro* this "protoxin" reacts with different serum proteins to produce toxic, nontoxic, or antitoxic products, depending upon the protein used. With serum albumin, for example, a strong toxin is formed. With certain serum globulins a corresponding specific antitoxin is generated. With intermediary proteins a non-toxic or neutral product may result. He believes the same types of reaction take place in the animal body.

Findings of this kind have led heterodox immunologists to wonder if in time it may not be shown that the main seat of antibody formation may not be in the blood stream, biochemical processes readily duplicated in the test tube.

W. H. MANWARING, Stanford University.

REFERENCES

1. Kryshanowski, W. N.: Centralbl. f. Bakteriol., Vol. cx, 1929.
2. Walbum, L. E.: Biochem. Ztschr., Vol. cxxxiv, 1923.

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION

MORTON R. GIBBONS.....President
LYLE C. KINNEY.....President-Elect
EMMA W. POPE.....Secretary

OFFICIAL NOTICES

Fall Meeting of the Council.—The next meeting of the Council will be held at Los Angeles, Saturday, September 28, 1929.

Registration at Coronado.—Coronado's registration was 1503; 966 of whom were doctors of medicine and 826 members of the California Medical Association.

This exceeds any previous registration by 302 and represents actual attendance at the meeting. Since San Diego County numbers only 223 members, had every San Diego County member registered, still the total registration of nonresident attendants at the meeting exceeded any previous record.

Del Monte Meeting, April 28 to May 1, 1930.—Del Monte has been selected for the next annual meeting place. There is divided sentiment regarding meetings in the larger cities. The interest of physicians who reside in the city chosen is of necessity divided between the care of patients and attendance at the various sessions. At Coronado, Del Monte, Yosemite, practically all members who are in attendance have severed their interest in practice for a certain definite number of days and are in spirit and body attending that particular meeting.

Newly Elected Officers.—Attention is again called to advertisement pages 2 and 4 on which are regularly published the names of state and county officers and of the section chairmen and secretaries.

To carry out the provisions of the present Constitution and By-Laws, adopted at the second House of Delegates meeting, terms of office have in several instances been changed in date, that three district councilors and two councilors-at-large may be elected each year.

REVISION OF COUNCILOR DISTRICTS*

District	No. of Delegates	No. of Counties	No. of Societies	No. of Members	Counties Comprising Each District
1	8	4	4	361	Imperial, Orange, Riverside, San Diego
2	32	1	1	1620	Los Angeles
3	6	5	5	246	Kern, San Bernardino, San Luis Obispo, Santa Barbara, Ventura
4	8	12	6	285	Calaveras, Fresno, Inyo, Kings, Madera, Mariposa, Merced, Mono, San Joaquin, Stanislaus, Tulare, Tuolumne
5	7	5	5	234	Monterey, San Benito, San Mateo, Santa Clara, Santa Cruz
6	18	1	1	884	San Francisco
7	9	2	2	422	Alameda and Contra Costa
8	10	18	9	246	Alpine, Amador, Butte, Colusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Sutter, Tehama, Yolo, Yuba
9	7	10	7	168	Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Siskiyou, Solano, Sonoma, Trinity

* Based on membership of, and on delegates elected in, 1928.

The following is a list of the present officers and councilors:

OFFICERS

President.....Morton R. Gibbons, San Francisco
President-elect.....Lyell C. Kinney, San Diego
Speaker of House of Delegates.....Edward M. Pallette, Los Angeles
Vice-Speaker of House of Delegates.....John H. Graves, San Francisco
Secretary-Treasurer.....Emma W. Pope, San Francisco
Editors.....{ George H. Kress, Los Angeles
Emma W. Pope, San Francisco

DISTRICT COUNCILORS

First District	Mott H. Arnold, San Diego	1932
Second District	William Duffield, Los Angeles	1930
Third District	Gayle G. Moseley, Redlands	1931
Fourth District	Fred R. De Lappe, Modesto	1932
Fifth District	Alfred L. Phillips, Santa Cruz	1930
Sixth District	Walter B. Coffey, San Francisco	1931
Seventh District	Oliver D. Hamlin, Oakland	1932
Eighth District	Junius B. Harris, Sacramento	1930
Ninth District	Henry S. Rogers, Petaluma	1931

COUNCILORS-AT-LARGE

George G. Hunter, Los Angeles	1932
Ruggles A. Cushman, Santa Ana	1930
George H. Kress, Los Angeles	1931
Joseph Catton, San Francisco	1932
T. Henshaw Kelly, San Francisco	1930
Robert A. Peers, Colfax	1931

Districts.—Attention of the members is called to the revision of councilor districts. A full report of this will appear in the minutes of the Council and House of Delegates.

The table below furnishes important data.

Standing Committees.—Chapter VIII, Section 1 of the By-Laws of the California Medical Association reads:

"The standing committees of this Association shall be as follows:

- (a) A Committee on Associated and Affiliated Societies.
- (b) A Committee on Extension Lectures.

- (c) A Committee on Health and Public Instruction.
- (d) A Committee on Hospitals, Dispensaries, and Clinics.
- (e) A Committee on Industrial Medical Practice.
- (f) A Committee on Medical Economics.
- (g) A Committee on Medical Education and Hospitals.
- (h) A Committee on Medical Defense.
- (i) A Committee on Membership and Organization.
- (j) A Committee on Necrology.
- (k) A Committee on Publications.
- (l) A Committee on Public Policy.
- (m) A Committee on Scientific Work (specially provided for in Constitution).

"Chapter VIII, Section 2. How Elected—Terms of Office."

"Unless otherwise provided in these By-Laws each of the standing committees shall consist of three members, each of whom shall serve for a term of three years. One member of each of these committees shall be nominated and elected annually by the Council, by and with the approval of the House of Delegates, provided that at the annual session at which this Constitution is adopted, one member of each of the foregoing committees shall be elected for a term of three years, one member for two years, and one member for one year, their successors to be elected in proper and regular annual sequence thereafter."

To contact more easily with the Council, in most cases a member of the Council was elected to serve for a term of one year on each of the above committees. The chairman is selected by the members of the committee.

The appointment of the following standing committees automatically dissolves all previous committees.

STANDING COMMITTEES

Committee on Associate and Affiliate Societies	
Harold A. Thompson, San Diego	1932
William Bowman, Los Angeles	1931
T. Henshaw Kelly, San Francisco	1930
Committee on Extension Lectures	
James F. Churchill, San Diego	1932
Robert T. Legge, Berkeley	1931
Robert A. Peers, Colfax	1930
Committee on Health and Public Instruction	
Fred B. Clarke, Long Beach	1932
Gertrude Moore, Oakland	1931
Henry S. Rogers, Petaluma	1930
Committee on Hospitals, Dispensaries, and Clinics	
John C. Ruddock, Los Angeles	1932
Walter B. Coffey, San Francisco	1931
Gayle G. Moseley, Redlands	1930
Committee on Industrial Medical Practice	
Packard Thurber, Los Angeles	1932
Ross W. Harbaugh, San Francisco	1931
Mott H. Arnold, San Diego	1930
Committee on Medical Economics	
John H. Graves, San Francisco	1932
William T. McArthur, Los Angeles	1931
Ruggles A. Cushman, Santa Ana	1930
Committee on Medical Education and Hospitals	
George Dock, Pasadena	1932
H. A. L. Ryfkogel, San Francisco	1931
George G. Hunter, Los Angeles	1930
Committee on Medical Defense	
George G. Reinle, Oakland	1932
Dwight H. Trowbridge, Fresno	1931
Gayle G. Moseley, Redlands	1930
Committee on Membership and Organization	
Harlan Shoemaker, Los Angeles	1932
LeRoy Brooks, San Francisco	1931
Jesse W. Barnes, Stockton	1930

Committee on Necrology	
Charles D. Ball, Santa Ana	1932
Percy T. Phillips, Santa Cruz	1931
Emmet Rixford, San Francisco	1930
Committee on Publications	
Alfred C. Reed, San Francisco	1932
Percy T. Magan, Los Angeles	1931
Frederick F. Gundrum, Sacramento	1930
Committee on Public Policy	
Junius B. Harris (chairman), Sacramento	1932
William Duffield, Los Angeles	1931
Joseph Catton, San Francisco	1930
Committee on Scientific Work	
Emma W. Pope (chairman), San Francisco	
Karl Schaupp, San Francisco	1932
Lemuel P. Adams, Oakland	1931
Robert V. Day, Los Angeles	1930
Ernest H. Falconer,* San Francisco	1930
Dexter N. Richards,* Oakland	1930

**MINUTES OF THE HOUSE OF DELEGATES,
FIFTY-EIGHTH ANNUAL SESSION OF
THE CALIFORNIA MEDICAL
ASSOCIATION**

First Meeting

Held in the ballroom, Hotel del Coronado, Coronado Beach, California, Monday, May 6, 1929, at 8 p. m.

I. Call to Order.—The meeting was called to order by President William H. Kiger of Los Angeles.

* * *

II. Roll Call.—The secretary called the roll; ninety-eight (98) members of the House of Delegates comprising officers, councilors, and delegates were seated out of a total membership of one hundred and twenty-three (123), and the president declared a quorum present.

The chair stated that it was the custom for the president to make a report to the House of Delegates, but that, inasmuch as there was so much business to be transacted and the report would necessarily be more or less of a repetition of the reports of the Council and the secretary, he had decided to eliminate it and proceed with other business.

* * *

III. Appointment of the Reference Committee.—The chair announced that he had appointed as members of the Reference Committee, Junius B. Harris of Sacramento, chairman; Edward N. Ewer of Oakland and Clarence G. Toland of Los Angeles.

* * *

IV. Report of the Council.—At the request of the chair, Oliver D. Hamlin of Oakland, chairman of the Council, then presented the following report of the Council:

COUNCIL MEETINGS FROM APRIL 1928 TO APRIL 1929

The Council has held seven meetings during the past year and the Executive Committee has held eight meetings, making a total of fifteen meetings of the officers of the Association and councilors.

FUNDS OF THE ASSOCIATION

The auditor's report, which will be read at this meeting, shows a reserve to the credit of the Association. It is fitting that an Association of almost five thousand members have a reserve that will permit growth and progress, and the carrying out of any policy along those lines that may hereafter be inaugurated by your House of Delegates.

* Secretary of the Sections on General Medicine and General Surgery.

ANNUAL ASSESSMENT

The Council recommends, therefore, that the annual assessment remain the same as at present, \$10.

INVESTMENT OF CALIFORNIA MEDICAL ASSOCIATION FUNDS

For the safety of the funds of the Association, no large sum has been placed in any one savings bank. They have been distributed among the best banking houses in San Francisco and Los Angeles. No investment of funds other than in savings banks has been authorized by the Council.

CONSTITUTION AND BY-LAWS

No constitution and by-laws was adopted at the 1928 House of Delegates. In accordance with action taken by the delegates at that time, a special committee was appointed by the president and the president-elect to consider the two drafts submitted at the 1928 meeting. With a few minor changes, this committee recommends the adoption of the draft prepared by the former Committee on Revision of the Constitution and By-Laws, which constitution is based upon the model form recommended by the American Medical Association. The Enabling Act, if adopted by the 1929 House of Delegates, will permit the introduction of any amendments desired and action on these amendments at the end of twenty-four hours. Final adoption of the Constitution and By-Laws rests with the House of Delegates.

CLINICAL AND RESEARCH PRIZES

No paper has been submitted for either clinical or research prize. Six papers were submitted during 1928 and three during 1927.

The Council recommends that this seeming lack of interest be not taken as final and that the prize competition remain open for another year.

MEMBERSHIP

The gain in membership has increased during the past year. While it is true that only 50 per cent of the licensed practitioners of medicine in California are affiliated with the Association, it is to be remembered that in the 50 per cent of unaffiliated doctors are included homeopaths, eclectics, and graduates of exclusive schools of medicine as well as graduates of regular schools of medicine and also that California is the mecca for physicians in search of climate and health, many of whom are not actively practicing medicine. Three of our county societies accept members only after they have lived in the county six months. The proposed constitution and by-laws provides that no member shall be eligible for election in a component county society who has not actually established his residence in the county for at least six months prior to the date on which application for such membership is voted upon.

REDISTRICTING THE ASSOCIATION

A committee was appointed at the last annual meeting to submit a report showing plans for redistricting the Association. The committee has endeavored to more equally divide the councilor districts according to the size of the county covered and the number of members included.

At its one hundred and seventy-ninth meeting on January 12, the Council redistricted the Association in accordance with the report of the Committee on Redistricting, Dr. Henry Rogers, chairman. This redistricting is in accordance with the printed slips which have been presented to you at this meeting.

On careful study and investigation, one thing stood out very clearly and that is that the smaller counties prefer to be grouped together and not placed in districts with larger cities. They feel that they have no chance of representation on the Council when grouped with larger cities because the men are usually chosen from the city.

THE WOMAN'S AUXILIARY

The Council and the House of Delegates have approved the formation of a Woman's Auxiliary. A set of rules governing the formation have been adopted by the Council. Each county secretary has been asked to appoint three representative delegates from his component society to attend the organization meeting of the Woman's Auxiliary at Coronado. Following the formation of the State Auxiliary, the delegates will return to their counties prepared to organize the county auxiliaries throughout California.

LEGISLATION

This year's session of the California Legislature brought many problems to the Council. The proposed Professional Standards Department has been discussed at length in our state journal and in the special leaflet which went to the members of our Association. The same may be said of the state medical library, the basic science act, the nurses, and other bills in which the medical profession has a special interest. In safeguarding the interests of our profession and of the public health, it was necessary for many officers of the Association to give special service and time. In addition to the work of your Legislative and Executive committees, the work of Doctor Harris, whose residence in Sacramento makes him an invaluable member of the Legislative Committee, and of Doctor Catton and Doctor Kelly, residents of San Francisco, who on several occasions have spent from one to three days in Sacramento in order to watch measures important to the medical profession during critical periods, deserve special mention.

Certainly it is true, that with the passing of the years, the need of alertness does not lessen when our lawmakers are in session. This is no reflection on the integrity or ability of our legislators, but is simply to be taken as an expression of the complexity of our modern-day living and the many interests which, with good intentions or otherwise, seek to inject themselves into our lawmaking bodies. This year's experience again emphasized that, as in business, it is most necessary to have centralized authority and unity of action if the interests of the medical profession are to be adequately protected. The extent and manner in which aid from nonprofessional or lay sources is to be sought and relied upon when our legislature is in session is one of the problems which the members of your Council have seriously discussed. At this time the Council has no solution other than to advise that all members of the Association have a responsibility in these matters, that the general officers such as the Council and its Executive Committee have a very special responsibility and that these administrative officers must be alert to maintain a firm, efficient, dignified, unified and nonpartisan presentation of the rights of the medical profession, in relation to its own and public health interests.

The legislature is still in session and will not adjourn until May 15. Vigilance and whole-hearted and united endeavor, combined with clarity of vision, will be required from the Association officers and members up to the day the present legislature adjourns.

Once the legislative session is over, it will be well for the Council and the component county societies to give serious consideration to medical licensure and other measures which will come up two years hence, when the next legislature meets or, in the case of any initiative measures, within a year from this time.

The report of the Council was referred to the Reference Committee.

* * *

V. Report of the Committee on Scientific Program.—At the request of the chair, Emma W. Pope of San Francisco, chairman of the Committee on Scientific Program, then read the following report:

It seems anomalous that the splendid work done in the preparation of the annual program should each year be reported by a chairman who has taken the smallest part in the actual planning of that program, either by selection of the speakers or of the various subjects discussed. The officers of the sections have determined the programs of the sections meetings; the San Diego Arrangements Committee has planned the programs of the general meetings. To be sure the Program Committee has again met at Santa Barbara with both the section officers and the members of the Arrangements Committee, but only to listen to reports of the work already done and to assist in a unification of the entire program.

The thanks of the Association are, therefore, extended to the section officers and to the Committee on Arrangements. Their duties are not few; the correspondence entailed is voluminous; the responsibility of decision is not light.

Some regular rotation and advancement in office should be provided by each section that the experience gained by actual service may be kept available for each newly elected secretary. The term of office in the case of an efficient secretary could, with benefit to the Association, be extended beyond the usual year of service.

Since CALIFORNIA AND WESTERN MEDICINE publishes the greater number of articles read at any annual meeting, any movement aimed to better the quality of material presented is of distinct advantage to the official organ of the California Medical Association and to the readers of the journal.

The Arrangements Committee have provided most able speakers for the general meetings. The Association are greatly appreciative and desire to express their heartiest thanks to these invited guests who have so largely contributed to the success of the Coronado meeting.

The Report of the Committee on Scientific Program was referred to the Reference Committee.

* * *

VI. Report of the Auditing Committee.—At the request of the chair, T. Henshaw Kelly of San Francisco, chairman of the Auditing Committee, then read excerpts from the audit of the books of the Association and filed the full audit with the secretary.

The report of the Auditing Committee was referred to the Reference Committee.

* * *

VII. Report of the Secretary.—At the request of the chair, Emma W. Pope of San Francisco then presented the report of the secretary as follows:

WORK OF CENTRAL OFFICE

The detailed reports of the chairman of the Council, of the chairman of the Auditing Committee, and of the editors, leave a very limited survey of the actual work done in the state office to be covered in the report of the secretary. The state office, however, must be visualized as a workshop, wherein are kept the minutes, records, and correspondence referred to in the report of the Council, and the Executive Committee, and financial accounts referred to in the auditor's reports, and through which passes the large correspondence necessitated by the editing of CALIFORNIA AND WESTERN MEDICINE and the handling of its advertising, to realize that the activities enumerated in the report of the secretary in no way cover the entire activities of the state office.

Four assistants divide the office work and each is conversant with the service of the other. The book-keeper has been with the California Medical Association twelve years, one stenographic assistant seven years, and the other three years. This length of service coupled with the personal interest and an understanding of the entire office work is largely responsible for the ability of this limited number of assistants to accomplish results that in former years have required a larger staff of assistants.

MEMBERSHIP

The net gain in membership in 1928 was 307, as against a net increase in 1927 of 114. The actual number of new members was 453, which number was reduced to 307 by the death of fifty-eight of our members, by the resignation of eight, and the delinquency of eighty.

FINANCES

The auditor's report shows the Association reserve has grown. In 1919, forty-eight years after the formation of the medical association of California, the secretary reported: "For the first time the State Medical Society is out of debt at the end of the fiscal year, and has an actual cash more than \$2000 to its credit." Those of you who listen to the auditor's report will realize that at this meeting, only a decade later, the California Medical Association has a reserve that annually nets an interest in excess of the principle so proudly reported by Dr. Saxton Pope ten years ago. Financially the California Medical Association has made progress.

That the dues which have permitted this progress are not disproportionate the following comparative assessment shows: An item in the March issue gave the cost of an annual dinner of a component county society as exactly equal to the yearly cost of membership in the State Association. A recent editorial in the March Indiana journal read: "We learn that six state medical associations have annual dues of \$25 or more, and one state charges its members \$50 per year." We have just received information that the Idaho State Medical Society has reduced its annual dues from \$60 to \$50 a year. It would seem that California, with all her prosperity, is traveling a snail's pace.

UNITY

Two years have passed since any letter antagonistic to the work of the Association has been received at the office. The helpful coöperation of county secretaries with the state office has had much to do with this harmony. The yearly luncheon, at which county secretaries meet with the members of the Council and are given a very clear understanding of the work of the Association, has done much to eliminate misunderstanding. The information there obtained goes back unwarped to the county membership; and county secretaries, acting as liaison officers, bring the problems of the county society to the attention of the Council.

PLACEMENT BUREAU

The society continues its placement service to the members. In 1928 twenty physicians, eight physiotherapists and technicians, and thirty office assistants and nurses were placed. No work the Association does more directly impresses its members with its practical value. While the work entails correspondence, telephone calls, and telegrams, it is entirely gratuitous and wholly impersonal. All applicants listed are advised of each opening as it comes in. All who ask for physicians are given the full list on file. Decision and choice then rest with those so brought together.

EXTENSION LECTURES

County secretaries report quite regularly the names of invited speakers from the Extension Service in their monthly reports as having been present at the regular meeting. These frequent calls upon non-members of the county societies give a new interest to county meetings. The Extension Lecture Service becomes a form of graduate medicine; for where the members cannot go to the teaching centers, specialists in various departments can go to them. While the Placement Bureau benefits only a limited number, this Extension Bureau is helpful to a much larger group of our members.

DIRECTORY

The fourth annual directory, sent out on January 1, added new information to that of previous years.

ADDRESSOGRAPH

The purchase of an addressograph, authorized by the Council, has made it possible to reach the entire

membership by letter in matters of importance to the State Association in a limited number of hours. This service will be kept to date and is available to our members and advertisers at a nominal cost.

COUNTY SECRETARIES

County secretaries are very evidently chosen because of special ability and industry and interest in the office. Lassen-Plumas, San Benito, Tehama, and Solano have reported 100 per cent payment of dues. Since a chain is only as strong as its connecting links, the growing strength and activity of the various component societies should be a source of gratification to the California Medical Association.

The report of the secretary was referred to the Reference Committee.

* * *

VIII. Report of the Editors.—At the request of the chair, George H. Kress of Los Angeles then presented the following report on behalf of the editors:

Your editors beg leave to submit herewith their report concerning CALIFORNIA AND WESTERN MEDICINE to cover the period since the last annual session at Sacramento.

During the present year no changes of major import have been made in the typographical make-up of CALIFORNIA AND WESTERN MEDICINE. When your present editors took over the editorial management of your journal, they determined that it would be a distinct advantage if a definite and a somewhat permanent form of make-up could be established for the official publication of the Association. Accordingly the major departments which constitute the present form were instituted, and a definite place assigned each such department. It was felt that CALIFORNIA AND WESTERN MEDICINE would thus take on a form that could be easily consulted, and that would make its pages more readable and interesting to the members of the California Medical Association. The passage of the months leads your editors, from all they can learn, to believe that the form in which the journal is now presented is one that is acceptable and pleasing to most of the members.

In addition to establishing a regular form of make-up, it was early decided to secure the coöperation of as many members as possible in the presentation of scientific material. It is our belief that the discussions which are appended to practically every article have not only added much to the interest and value of these various special articles, but that in securing the coöperation of these many additional members, the journal is laying the foundation for better papers for our annual sessions, and is developing better writers on medical subjects.

The special Bedside Medicine and Medicine Today departments have placed the editors under obligation to the numerous colleagues who have taken part in the presentation of material in those departments, which aim to mirror the progress of scientific medicine by colleagues who have particular interest in the various phases of medical practice which are therein discussed.

It is hoped that the editorial presentations of organization problems which confront the California Medical Association have been of aid in creating greater interest in these many important matters with which the practice of medicine is nowadays so intimately identified and upon the proper solution of which the future of medical practice will so largely depend.

It has been gratifying to the editors to know that their belief in the value of the advertising pages of CALIFORNIA AND WESTERN MEDICINE was not in error, and that the 33 per cent increase in advertising rates which was recommended to go into effect on the first of the present calendar year brought practically no loss of advertisers, but a very considerable increase of income. CALIFORNIA AND WESTERN MEDICINE is today on considerably more of a self-supporting basis than at the time it was placed under the supervision of the present editors.

If it be not deemed immodest it might be pardonable to say that no state medical journal in America, in typographical make-up and in general form, can be said to be superior to the official journal which the California Medical Association is now printing. The efforts to still further improve the publication will be continued, and with proper coöperation of members additional improvement will be made.

Your editors, as in previous years, have divided the manuscripts and department and other labors of the journal between them, and are grateful that their viewpoints on basic policies for CALIFORNIA AND WESTERN MEDICINE have always been in accord.

As is known to practically all of you, the papers read at each annual meeting become the official property of the journal, and in due time appear therein. A summary concerning the papers received, printed, and on hand, would be somewhat as follows:

Of the one hundred and twenty-five papers read at the last annual meeting, but twelve are now unpublished.

Published in 1928.....	37
Published in 1929.....	36
Read and published elsewhere, declined, or not sent in.....	40
Remained unpublished.....	12

Total..... 125

Articles published in 1928:

Papers from 1927 meeting.....	40
Papers from 1928 meeting.....	37
Prize papers.....	5
Papers read before general sessions.....	5
Lure of Medical History.....	11
Papers from Utah and Nevada.....	6
Papers read before other societies.....	20
Papers not read.....	13
Case Reports and Clinical Notes.....	26

Total..... 163

We have at present on hand:

Papers from 1928 meeting.....	12
Read before other societies.....	7
Original papers not read.....	8
Read before Utah and Nevada.....	2
Lure of Medical History.....	3
Case Reports and Clinical Notes, etc.....	8

Total..... 40

In conclusion, the editors again desire to thank all those members who have courteously coöperated in the efforts to make CALIFORNIA AND WESTERN MEDICINE one of the outstanding state medical society publications in the United States.

The report of the editors was referred to the Reference Committee.

* * *

IX. Report of the General Counsel.—At the request of the chair, Mr. Peart then submitted the report of the legal department, giving cases disposed of during the year and cases still pending; also claims still pending and the condition of the funds at the present time. Mr. Peart then briefly outlined the formation and activities of the Indemnity Defense Fund and gave an outline of the cases handled throughout the year and the cases still pending. The general counsel then outlined the additional work done by the legal department in connection with contracts entered into by the Association; opinions on legal questions; and work on bills before the state legislature requiring legal advice.

The report of the general counsel was referred to the Reference Committee.

* * *

X. New and Unfinished Business:

1. Constitution and By-Laws.—George G. Reinle, member of the Committee on the Constitution and By-Laws, stated that on account of the unavoidable

absence of Percy T. Magan, chairman of the committee, he would submit the report. Doctor Reinele stated that the committee had studied the proposed constitutions and by-laws and, with a few minor changes, recommended the adoption of the Constitution and By-Laws as prepared by the former Committee on Revision.

T. Henshaw Kelly then moved that the House of Delegates adopt the following amendment to the Constitution which was presented at the annual meeting of the Association held at Los Angeles April 25 to April 28, 1927, at the second meeting of the House of Delegates held on April 27, 1927, and re-presented at the annual meeting of the Association held at Sacramento, April 30 to May 3, 1928, at the first meeting of the House of Delegates held on April 30, 1928, and which has been published twice in *CALIFORNIA AND WESTERN MEDICINE*, the official journal of the Association, during each year following its presentation and re-presentation. Said amendment being then read by Doctor Kelley as follows:

Amend Article XII of the Constitution relating to amendments by striking out the existing article and substituting in lieu thereof the following:

ARTICLE XII AMENDMENTS—ENABLING ACT

The House of Delegates at any annual meeting, including the meeting at which this amendment is adopted, may amend any article of this Constitution by a two-thirds vote of the delegates present and acting; provided that any amendment to the Constitution is submitted in writing and laid on the table for twenty-four hours previous to being considered and acted upon.

Doctor Kelly then moved for the adoption of the foregoing amendment; such motion was seconded by George G. Reinele of Oakland, and unanimously carried; the vote in the affirmative being more than two-thirds of the members of the House of Delegates present and acting, and more than two-thirds of all the members thereof.

2. Report of Final Committee on Revision.—Doctor Kelly stated that the amendment was passed in order to insure the validity of action proposed to be taken on the Constitution and By-Laws. Doctor Kelly then advised the House that a committee, appointed by the Council, consisting of Dr. George H. Kress, the general counsel of the Association and himself had examined the draft of amended Constitution and By-Laws submitted by Percy T. Magan's committee and had made a few minor changes in substance and some rearrangement of grammatical construction. Doctor Kelly then submitted in writing, introduced and offered the said final draft of Constitution and By-Laws as amended and revised by said Committee on Revision, also draft of amended Constitution and By-Laws as recommended by the committee of which Doctor Magan is chairman, and also draft of the Constitution and By-Laws prepared by the general counsel in cooperation with other members of the Association; and also amendment suggested by a delegate from San Diego County relating to necessary length of residence in a county before an applicant is eligible for membership in a county society; all of said amendments being in writing and submitted, introduced and offered as amendments both to the Constitution and to the By-Laws.

Doctor Kelly then stated that copies of the final draft would be printed for consideration at the House of Delegates on Wednesday.

3. Authority for Incorporation.—Doctor Kelly then stated that the Council having deemed it wise to incorporate a holding corporation for the Association, he now wished to submit for the Council the following resolution on incorporation:

Whereas, The objects and purposes of this Association will be aided and furthered by the formation of a corporation, and the conveyance, assignment and transfer to such corporation of certain assets and property of this Association; now, therefore, be it

Resolved, That the Council is hereby authorized, empowered, and directed to cause the formation and organization of a nonprofit corporation under the laws of the State of California, without capital stock, the members whereof shall be active members of this Association, who are councilors or constitutional officers thereof, with such incorporators, name, purposes, objects, principal place of business, term, number of directors, and directors to serve for the first year and until their successors are elected, and shall have accepted office, and with such provisions regarding the voting power and property rights and interests of the members of the corporation and with such further provisions in the articles of incorporation thereof and with such by-laws as the Council shall prescribe, fix, and determine; and be it further

Resolved, That upon the formation of such corporation the Council and the officers of this Association or any of the officers designated by the Council are hereby authorized and empowered to grant, assign, transfer, convey, and deliver, or cause to be granted, assigned, transferred, conveyed, and delivered to the said corporation without any consideration therefor such property, real or personal, of the Association as the Council shall determine; and to execute and deliver in the name of the Association such conveyances, assignments, and transfers and other instruments as shall be approved by the Council to carry out the foregoing.

Doctor Kelly then moved for the adoption of the foregoing resolution and all of the foregoing amendments to the Constitution and By-Laws. The chair then ordered all of said amendments laid on the table for twenty-four hours, and the foregoing resolution and all of the foregoing amendments to the Constitution and By-Laws were referred to the Reference Committee and also to the Committee on Revision.

4. Resolutions:

(a) **Resolution No. 1—Senate Bill No. 842—State Medical Library.**—Junius B. Harris of Sacramento then introduced the following resolution relating to Senate Bill No. 842 providing for the establishment of a medical library at Sacramento:

Resolved, That the California Medical Association in its fifty-eighth annual session assembled at Coronado, California, heartily endorses and approves Senate Bill No. 842, which provides for the establishment and maintenance of a state medical library at the State Capitol, and respectfully urges the members of the California legislature to support this bill as passed by the Senate; and be it further

Resolved, That a copy of this resolution be telegraphed to every member of the legislature.

Doctor Harris then moved for the suspension of the rules of the House so that the telegrams could be sent immediately; which motion was seconded by Oliver D. Hamlin of Oakland and unanimously carried.

Henry J. Ullmann of Santa Barbara then moved for the adoption of the resolution, which motion was seconded by T. Henshaw Kelly of San Francisco and carried.

(b) **Resolution No. 2—Dispensaries, Clinics, and Like Institutions.**—John C. Ruddock of Los Angeles spoke of the work of the Clinic Commission of the Los Angeles County Medical Association giving a summary of the work of the commission and then presented the following resolution on clinics, dispensaries, and like institutions as prepared by the Los Angeles Clinic Commission:

Whereas, The care of the indigent sick and injured demands careful supervision in order that the highest and best interests of both the public and of the medical profession shall be maintained; and

Whereas, In the last few years a large number of dispensaries, clinics and institutions and organizations of similar import have come into existence, presumably to care for the indigent sick and injured according to standards laid down by the best practice, but

some of which institutions, such as dispensaries, clinics, and so on, are really a cover for mercenary or commercialistic exploitation of the lay public who may need the care of men and women engaged in the practice of scientific medicine; and

Whereas, All such perversions of legitimate philanthropic and professional care to the indigent sick and injured of the state promotes a lack of confidence among the lay public and unjustly casts reflection upon scientific and organized medicine; now, therefore, be it

Resolved, By the Los Angeles delegation of the House of Delegates of the California Medical Association that the House of Delegates of the California Medical Association be petitioned to give instructions to the Council of the California Medical Association to undertake, within the coming year, a survey of institutions such as dispensaries, clinics, etc., in different parts of California, to the end of learning to what extent institutions of this type exist, which from the standpoint of justice to the lay public and to the medical profession should not exist, and to determine where and to what extent such institutions, directly or indirectly, trench into the domain of state medicine, and so on; and be it further

Resolved, That the House of Delegates instruct the Council to expend the necessary funds in order to carry out such investigations in proper form. The Council to have the right from time to time to make any special investigations in relation to these matters and to give from time to time, through the official journal, publicity to such phases of these problems as may be deemed desirable, and at the next annual meeting to bring in a detailed report concerning its investigations thereon; be it further

Resolved, That this House of Delegates does here-with give such instructions as outlined above to the Council of the California Medical Association.

Resolution No. 2, clinics, dispensaries and like institutions, was referred to the Reference Committee.

(c) Resolution No. 3—Medical Licensure:

George H. Kress of Los Angeles then stated that one of the subjects considered by the Association has been the matter of medical licensure; that the Special Committee had made its final report to the Council; and that upon instructions from the Council he wished to introduce the following resolution:

Resolved, By the California Medical Association that the Council be instructed to appoint a committee to make a prompt and thorough study of the present Medical Practice Act of California, and of basic science acts, in order that the Council may better determine what action if any should be taken by legislative or initiative measures to better scientific medicine and the public health.

Resolution No. 3, Medical Licensure, was referred to the Reference Committee.

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XI. William S. Thayer.—The president announced that before adjournment he would like Dr. William S. Thayer, president of the American Medical Association to address the House. The president appointed President-elect Gibbons to escort Doctor Thayer to the platform. Doctor Thayer then addressed the House, commending the American Medical Association on its activities and co-operation with state associations.

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XII. Reading and Adoption of Minutes.—The minutes of the meeting were then read and, there being no objection, were approved.

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XIII. Adjournment.—There being no further business the meeting adjourned to meet at 8 p. m., Wednesday, May 8, 1929.

**MINUTES OF THE HOUSE OF
DELEGATES**
Second Meeting

Held in the breakfast room, Hotel del Coronado, Coronado, California, Wednesday, May 8, 1929.

I. Call to Order.—The meeting was called to order by the president, William H. Kiger of Los Angeles.

* * *

II. Roll Call.—The secretary called the roll; ninety-one (91) members of the House of Delegates comprising officers, councilors, and delegates were seated out of a total membership of one hundred and twenty-three (123), and the president declared a quorum present.

* * *

**III. Announcement of the Place of Meeting for
1930.**—The chair announced that the Council had selected Hotel Del Monte, Del Monte, as the place of the 1930 annual session and the date of the meeting had been set as April 28 to May 1, 1930.

* * *

IV. Report of the Reference Committee.—The president then called upon the chairman of the Reference Committee, Junius B. Harris, for the report of said committee. Doctor Harris presented the following report:

1. Report of the Council.—Certain items in the report of the Council warrant special attention.

(a) Clinical and Research Prizes.—The Reference Committee feels that the two \$150 prizes for the best papers on clinical and research subjects should be given publicity by section officers, county societies and through the journal, and I move for the adoption of the recommendation of the Council for the continuance of the awards.

Motion of Junius B. Harris was seconded by T. Henshaw Kelly and unanimously carried.

(b) Annual Dues.—In view of the benefits offered to all members of the Association, the Reference Committee suggests the adoption of the recommendation of the Council that the annual dues be set as \$10, and I so move.

Motion of Junius B. Harris was seconded by Morton R. Gibbons and unanimously carried.

(c) Membership.—The report on membership is very satisfactory and the Reference Committee feels that the recommendation of the Council contained in its report that campaigns for membership be so guarded that new members will be a credit to the Association should receive the unanimous approval of all members of the Association.

The Council's report of the redistricting of the Association, the forming of the Woman's Auxiliary, and handling legislation appears commendable to your committee. The Association is indebted to those who have worked on these committees.

The report of the Council shows that the Association is working harmoniously along constructive lines, and I move for the approval of the Council's report as a whole.

Motion of Junius B. Harris was seconded by Langley Porter and carried.

2. Report of the Secretary.—The gain in membership as given by the secretary's report is very gratifying. It is also interesting to know that many state societies have much larger dues than our Association. When one considers the value of the journal, the Extension Lectures, Placement Bureau, addressograph service and other benefits open to all members, our present dues seem more than justified. As stated by the secretary, trained workers both in the offices of the Association and in various county society offices are invaluable to the strength of the entire Association. In recommending the report for adoption, the Reference Committee wishes to commend Doctor

Pope on the manner in which the business of the Association is carried on in the offices of the Association.

Junius B. Harris then moved for the adoption of the recommendation of the Reference Committee approving the report of the secretary; which motion was seconded by Morton R. Gibbons and carried.

3. Report of the Editors.—The report of the editors shows a very satisfactory condition of the state journal. The report on papers published during the last year is most pleasing. The typographical make-up, of the journal and the care exercised by the editors in selecting and editing of papers has made CALIFORNIA AND WESTERN MEDICINE one of the outstanding medical journals.

The Association is appreciative of the splendid work of the editors, and I move for the adoption of the recommendation of the Reference Committee approving the report of the editors.

Motion of Junius B. Harris was seconded by Henry J. Ullmann, and carried.

4. Report of the Committee on Scientific Program.—The report of the Committee on Scientific Program outlines the fine work done by section officers and the Arrangements Committee. The efforts of the committee in maintaining the high standard of articles to be published in the journal by careful selection of programs is worthy of mention.

The Reference Committee commends the report and I move for the adoption of the recommendation of the Reference Committee approving the report of the Committee on Scientific Program.

Motion of Junius B. Harris was seconded by Robert A. Peers, and carried.

5. Report of the Auditing Committee.—As stated in the report of the Auditing Committee the funds of the Association are in a very satisfactory condition. I move for the adoption of the recommendation of the Reference Committee approving the report of the Auditing Committee.

Motion of Junius B. Harris was seconded by Henry J. Ullmann, and carried.

6. Report of the Legal Department.—The report of the legal department gives a very good outline of the cases and claims pending in the Medical Society and Legal and Indemnity Defense Funds. The special opinions rendered on legal questions during the year by the general counsel have been invaluable to the Association. The entire activities of the legal department show that the general counsel and his associates are ever alert to the best interests of the medical profession.

I move for the adoption of the recommendation of the Reference Committee approving the report of the legal department.

Motion of Junius B. Harris was seconded by George Reinle, and carried.

7. Resolution No. 1—Clinics.—The proposed survey on clinics and like institutions as submitted by the Los Angeles Clinic Commission presents a question of great importance to the medical profession and the public.

The Reference Committee therefore recommends that this resolution be referred to the Council and that the House of Delegates instructs the Council to study these problems, through such committee or committees to be appointed by the Council, and that the House of Delegates authorizes and empowers the Council to take such action through such committee or committees or otherwise in the name of the Association, and for and on behalf of the Association and its members, as in the judgment of the Council will work to the proper solution of these important mat-

ters, which so vitally concern the public health and welfare.

I move for the adoption of the recommendation of the Reference Committee. Ferdinand Stabel seconded the motion, which carried unanimously.

8. Resolution No. 2—Medical Practice and Basic Science Act.—The Reference Committee recommends that this resolution be referred to the Council with power to appoint a committee to study the whole matter, and I so move.

Motion of Junius B. Harris was seconded by Alexander Keenan, and carried.

9. Resolution No. 3—Honorary Membership of Lucy Wanzer.—The Reference Committee presented the following resolution, and Doctor Harris moved for its adoption:

Whereas, Doctor Lucy Wanzer is the oldest woman member of the medical profession of California and has for fifty years been an honored and beloved member of the medical profession of California; therefore be it

Resolved, That Doctor Lucy Wanzer be and hereby becomes an honorary member of the California Medical Association.

Motion of Junius B. Harris was seconded by Alexander Keenan, and unanimously carried.

10. Resolution No. 4—Death of Thomas W. Huntington.—The Reference Committee presented the following resolution, and Doctor Harris moved for its adoption:

Whereas, Dr. Thomas W. Huntington was one of the earliest distinguished, honored and beloved members of the California Medical Association, and

Whereas, Dr. Thomas W. Huntington, after a long life devoted to his chosen profession has been called by death; therefore be it

Resolved, That this House of Delegates of the California Medical Association assembled at Coronado, May 8, 1929, express its deep appreciation of the value of the services of Doctor Huntington to humanity; and be it further

Resolved, That the House of Delegates express its profound regrets for the loss to the State of California; and be it further

Resolved, That the sympathy of the California Medical Association be extended to the family of Doctor Huntington.

Motion of Junius B. Harris was seconded by E. J. Best, and unanimously approved by a rising vote.

11. Constitution and By-Laws.—The Reference Committee has examined and studied word by word, the final draft of the proposed Constitution and By-Laws which were formulated by the Committee on the Constitution and By-Laws consisting of Doctors Magan, Reinle, and Keenan, and revised and arranged by the Committee on Revision appointed by the Council and consisting of Doctors Kelly and Kress and the general counsel, Mr. Peart.

The Reference Committee finds it excellent in form and content, without any material changes from the report of the original Committee on Constitution and By-Laws.

The Reference Committee recommends the adoption of the Constitution and By-Laws without alteration, and I move the adoption of its recommendation.

Motion of Junius B. Harris was seconded by Alexander Keenan, and unanimously carried; the vote in the affirmative being more than two-thirds of the delegates present and acting.

* * *

V. Constitution and By-Laws.—The president then announced that T. Henshaw Kelly would report on the Constitution and By-Laws.

Doctor Kelly then stated that the final draft required a few corrections in arrangement and wording

intended to clarify meaning and to avoid confusion; that aside from this the Constitution and By-Laws was in the same form as the final draft submitted in writing at the first meeting of the House of Delegates. As shown by the records of the secretary's office, the said amendments to the Constitution and By-Laws as contained in said final draft thereof had been sent officially by the secretary of the Association to each component county society at least two months before this meeting, viz., February 15, 1929, and each thereof had been submitted in writing at the meeting of the House of Delegates held May 6, 1929, and laid on the table for twenty-four hours thereafter.

Doctor Kelly then moved that the House proceed with the consideration of the Constitution, which motion was seconded by Harlan Shoemaker, and carried unanimously.

Joseph King then moved that the House adopt the Constitution article by article, and if there was no objection the president shall declare each section as having been passed. Percy T. Phillips seconded the motion, which was unanimously carried: the vote in the affirmative being more than two-thirds of the delegates present and acting.

T. Henshaw Kelly then read the final draft of the amended Constitution article by article by title and the president called for objections article by article and the House unanimously, by affirmative vote of more than two-thirds of all its members, adopted each article as read by title. No objection was entered by the House or any member thereof to any article of the Constitution.

Joseph King then moved for the adoption of the Constitution as a whole; which motion was seconded by Harlan Shoemaker, and unanimously carried; more than two-thirds of all members of the House of Delegates being present, acting and voting in the affirmative.

Joseph King then moved that the By-Laws be considered as read and adopted as a whole; such motion was seconded by William T. McArthur, and unanimously carried; more than two-thirds of all members of the House of Delegates being present, acting and voting in the affirmative.

T. Henshaw Kelly then introduced the following resolution on engrossing the Constitution and By-Laws:

Resolved, That the Executive Committee engross the Constitution and By-Laws, making the necessary typographical corrections and arrangements, index the same for greater reference convenience, and print the same in the official journal with reprints in pamphlet form.

Doctor Kelly then moved for the adoption of the resolution; such motion being seconded by George Reimle, and unanimously carried.

Doctor Kelly then moved that the House of Delegates extend a vote of thanks to the committee, consisting of Doctors Magan, Reinle, and Keenan, that established the final principles upon which the Constitution and By-Laws are based. The motion was seconded by W. J. Miller and carried.

* * *

VI. Incorporation.—William Duffield of Los Angeles then introduced the following resolution on incorporation:

Whereas, the objects and purposes of this Association will be aided and furthered by the formation of a corporation, and the conveyance, assignment and transfer to such corporation of certain assets and property of this Association; now therefore, be it

Resolved, That the Council is hereby authorized, empowered, and directed to cause the formation and organization of a nonprofit corporation under the laws of the State of California, without capital stock, the members whereof shall be active members of this Association, who are councilors or constitutional officers thereof, with such incorporators, name, purposes, objects, principal place of business, term, number of

directors, and directors to serve for the first year and until their successors are elected, and shall have accepted office, and with such provisions regarding the voting power and property rights and interests of the members of the corporation and with such further provisions in the articles of incorporation thereof and with such by-laws as the Council shall prescribe, fix, and determine; and be it further

Resolved, That upon the formation of such corporation the Council and the officers of this Association or any of the officers designated by the Council are hereby authorized and empowered to grant, assign, transfer, convey, and deliver, or cause to be granted, assigned, transferred, conveyed, and delivered to the said corporation without any consideration therefor such property, real or personal, of the Association as the Council shall determine; and to execute and deliver in the name of the Association such conveyances, assignments, and transfers and other instruments as shall be approved by the Council to carry out the foregoing.

Doctor Duffield then moved for the adoption of the foregoing resolution on incorporation; such motion was seconded by Alexander Keenan, and unanimously carried; more than two-thirds of all members of the House of Delegates being present, acting and voting in the affirmative.

* * *

VII. Referendum.—Doctor Duffield stated it would be necessary to pass a resolution on referendum and stated that the general counsel would explain the procedure to the House of Delegates. Mr. Peart then explained that the purpose of the referendum was to secure the consent of a majority of the members of the Association at large voting upon the matter.

Doctor Duffield then presented the following resolution:

Whereas, The House of Delegates of the California Medical Association at the regular annual session thereof duly noted, called and held at Coronado, San Diego County, California, May 6 to 9, 1929, did at a regular meeting of said session held on the eighth day of May 1929 (a quorum being present and acting) duly pass and adopt by the affirmative vote of two-thirds of the members thereof present and acting, a resolution in words and figures as follows, viz.:

Whereas, The objects and purposes of this Association will be aided and furthered by the formation of a corporation, and the conveyance, assignment and transfer to such corporation of certain assets and property of this Association; now, therefore, be it

Resolved, That the Council is hereby authorized, empowered, and directed to cause the formation and organization of a nonprofit corporation under the laws of the State of California, without capital stock, the members whereof shall be active members of this Association, who are councilors or constitutional officers thereof, with such incorporators, name, purposes, objects, principal place of business, term, number of directors, and directors to serve for the first year and until their successors are elected, and shall have accepted office, and with such provisions regarding the voting power and property rights and interests of the members of the corporation and with such further provisions in the Articles of Incorporation thereof and with such by-laws as the Council shall prescribe, fix, and determine; and be it further

Resolved, That upon the formation of such corporation the Council and the officers of this Association or any of the officers designated by the Council are hereby authorized and empowered to grant, assign, transfer, convey and deliver, or to cause to be granted, assigned, transferred, conveyed, and delivered to the said corporation without any consideration therefor such property, real or personal, of the Association as the Council shall determine; and to execute and deliver in the name of the Association such conveyances,

assignments, and transfers and other instruments as shall be approved by the Council to carry out the foregoing; now therefore be it

Resolved, That the said resolution and the action of the House of Delegates in passing and adopting the same be submitted to the decision and referendum votes of all of the active members of the Association by mail; and be it further

Resolved, That the Council be and is hereby authorized, empowered, and directed to fix and determine the form in which said resolution and the action of the House of Delegates in passing and adopting the same shall be so referred and submitted by mail to the active members of this Association, the form of the ballot thereon, and the time within which such referendum vote shall be cast by said active members.

Doctor Duffield then moved for the adoption of the foregoing resolution on referendum; such motion was seconded by Harlan Shoemaker, and unanimously carried; more than two-thirds of all the members of the House of Delegates being present, acting and voting in the affirmative.

* * *

VIII. Election of Officers.—The chair announced that the next order of business would be the election of officers and that, under the new Constitution, it would be necessary to elect a president-elect and a speaker and vice-speaker of the House of Delegates.

1. President-Elect.—The chair then stated that nominations for president-elect were now in order.

Mott Arnold of San Diego nominated Lyell C. Kinney of San Diego as president-elect; such nomination was seconded by T. Henshaw Kelly of San Francisco.

A. L. Bramkamp of Riverside nominated William W. Roblee of Riverside for president-elect; such nomination was seconded by A. S. Parker of Merced.

Henry J. Ullmann of Santa Barbara moved that the nominations be closed; such motion was seconded by George Reinle of Oakland.

The chair announced that he would appoint as tellers LeRoy Brooks of San Francisco, John Rudock of Los Angeles, and Edward Ziegelman of San Mateo.

A vote by ballot was then taken. While the ballot was being cast, on motion of Joseph King, seconded by Walter B. Coffey, the vote was made unanimous for Lyell C. Kinney. The secretary cast the ballot, and the president declared Lyell C. Kinney of San Diego unanimously elected president-elect.

2. Speaker of the House of Delegates.—William T. McArthur of Los Angeles, nominated Edward M. Pallette of Los Angeles for speaker of the House of Delegates; such nomination was seconded by Harlan Shoemaker of Los Angeles.

Percy T. Phillips of Santa Cruz moved that the nominations be closed and that the secretary be instructed to cast the ballot for Edward M. Pallette; such motion was seconded by T. Henshaw Kelly of San Francisco, and unanimously carried.

The secretary cast the ballot and the chair announced Edward M. Pallette of Los Angeles elected speaker of the House of Delegates for a term of one year.

3. Vice-Speaker of the House of Delegates.—William Duffield of Los Angeles nominated John H. Graves of San Francisco for vice-speaker of the House of Delegates; such nomination was seconded by Victor Vecki of San Francisco.

Ferdinand Stabel of Redding moved that the nominations be closed and that the secretary be instructed to cast the ballot for John H. Graves; such motion was seconded by Clarence Toland of Los Angeles, and unanimously carried.

The secretary cast the ballot and the chair announced John H. Graves of San Francisco elected

vice-speaker of the House of Delegates for a term of one year.

* * *

IX. Election of Councilors.—The chair announced that the next order of business would be the election of councilors under the new Constitution and By-Laws and called the attention of the House to Article IX, Section 9 of the new Constitution, reading:

"Upon the adoption of this Constitution, the House of Delegates shall proceed to elect councilors as follows: At the annual meeting, at which this Constitution is adopted, the councilors of the First, Fourth, and Seventh Districts and two councilors-at-large shall be elected; in the succeeding year the councilors of the Second, Fifth, and Eighth Districts and two councilors-at-large shall be elected; and in the year succeeding, the councilors of the Third, Sixth, and Ninth Districts and two councilors-at-large shall be elected; and so on in sequence in the years to follow."

"Where there is a conflict with the above provisions, as regards the time of expiration of office of any councilors holding office at the time this Constitution is adopted, then the terms of such councilors holding office and the terms of the councilors elected upon the adoption hereof shall cease at such times so that the above provisions may become operative; and any lapses of continuity of office arising through the above provisions shall be filled by the House of Delegates or the Council, as in the case of other vacancies."

"When a component county society shall have more than fifteen hundred members, two of the councilors-at-large shall be elected from its membership; the district councilor from each such county, and the two said councilors-at-large shall each be elected in different years in calendar sequence."

The chair then announced that the following chart had been prepared by the general counsel in order to clarify the matter of election of councilors, and that Mr. Peart would explain it to the House of Delegates:

Number of District	Expiration Present Terms	Expiration New Terms	Incumbent	Remarks	Term of Successors
1	1930	1932	Kinney	Resignat'n	3 years
2	1931	1930	Duffield	Resignat'n effective '30	No election
3	1931		2 years
4	1931	1932	De Lappe		3 years
5	1929	1930	(Bingaman Shephard)		1 year
6	1929	1931	Coffey		2 years
7	1929	1932	Hamlin		3 years
8	1931	1930	Harris	Resignat'n 1930	No election
9	1929	1931	Rogers		2 years
At Large:					
Shoemaker	1929	1932	Shoemaker		3 years
Kress	1929	1931	Kress		2 years
Catton	1929	1932	Catton		3 years
Curtiss	1929	1930	Curtiss		1 year
Peers	1931	1931	Peers		No election
Kelly	1931	1930	Kelly	Resignat'n effective '30	No election

Mr. Peart then explained the chart to the House of Delegates and stated that the resignation of Doctor Duffield, councilor of the Second District, effective in 1930; the resignation of Doctor Harris, councilor for the Eighth District, effective in 1930; the resignation of Doctor Kelly, councilor-at-large, effective in 1930; and the resignation of Doctor Kinney, effective prior

to his election as president-elect had been filed with the secretary.

The president then stated a ten-minute recess would be declared for purposes of caucuses for nominees for district councilors.

On motion of George H. Kress, seconded by Morton R. Gibbons, and carried, a ten-minute recess was declared.

* * *

X. Call to Order.—After a ten-minute recess the president called again the meeting to order and stated that the secretary would read the names of nominees from the districts in which elections were necessary according to the chart submitted.

XI. Election of Councilors:

1. First District.—The secretary announced that Mott Arnold of San Diego had been nominated as councilor for the First District by written nomination filed with the secretary signed by delegates William H. Potter of San Diego and A. L. Bramkamp of Riverside. William T. McArthur of Los Angeles seconded the nomination and moved that the nominations be closed and that the secretary be instructed to cast the ballot for Mott Arnold; such motion was seconded by George Reinle of Oakland, and unanimously carried.

The secretary cast the ballot and the chair announced the election of Mott Arnold as councilor for the First District for a term of three years.

2. Third District.—The secretary announced that Gayle G. Moseley of Redlands had been nominated as councilor for the Third District by written nomination filed with the secretary signed by delegates G. L. Sobey of Paso Robles and F. F. Abbott of Ontario. Charles L. Curtiss of Redlands seconded the nomination of Doctor Moseley.

George C. Sabichi of Bakersfield was nominated councilor for the Third District by Robert M. Jones of Ventura; such nomination being seconded by T. C. Myers of Los Angeles.

George Reinle of Oakland moved that the nominations be closed; which motion was seconded by Smith McMullin of Yuba City.

The chair then announced that a vote by ballot would be taken and that he would appoint Joseph K. Swindt of Pomona as teller in place of John Ruddock, who had been called from the meeting.

A ballot vote was then taken. While the ballot was being cast, on motion of Robert M. Jones, seconded by Morton R. Gibbons, the vote was made unanimous for Gayle G. Moseley of Redlands.

The secretary cast the ballot and the chair announced the election of Gayle G. Moseley as councilor for the Third District for a term of two years.

3. Fourth District.—The secretary announced that Fred R. DeLappe of Modesto had been nominated as councilor for the Fourth District by written nomination filed with the secretary signed by delegates A. S. Parker of Merced, Jesse W. Barnes of Stockton, Walter Tourtillott of Porterville, and Barton J. Powell of Stockton. Robert A. Peers of Colfax seconded the nomination and moved that the nominations be closed and that the secretary be instructed to cast the ballot for Fred R. DeLappe; such motion was seconded by Percy T. Phillips of Santa Cruz, and unanimously carried.

The secretary cast the ballot and the chair announced the election of Fred R. DeLappe as councilor for the Fourth District for a term of three years.

4. Fifth District.—The secretary announced that Alfred L. Phillips of Santa Cruz had been nominated as councilor for the Fifth District by written nomination filed with the secretary signed by delegates E. W. Hill of San Benito, Edwin Ziegelman of San Mateo, E. M. Miller of Santa Clara, Percy T. Phillips of Santa Cruz, William Gratiot of Monterey, and H. M. Hoyt of Pacific Grove. Smith McMullin of Yuba City seconded the nomination and moved that

the nominations be closed and that the secretary be instructed to cast the ballot for Alfred L. Phillips; such motion was duly seconded.

The secretary cast the ballot and the chair announced the election of Alfred L. Phillips as councilor for the Fifth District for a term of one year.

5. Sixth District.—The secretary announced that Walter B. Coffey of San Francisco had been nominated as councilor for the Sixth District by a written nomination filed with the secretary, signed by delegates W. R. P. Clark, Victor Vecki, and H. A. L. Ryfkogel, all of San Francisco. T. Henshaw Kelly seconded the nomination and moved that the nominations be closed and the secretary instructed to cast the ballot for Walter B. Coffey; such motion was seconded by Clarence Toland of Los Angeles.

The secretary cast the ballot and the chair announced the election of Walter B. Coffey as councilor for the Sixth District for a term of two years.

6. Seventh District.—The secretary announced that Oliver D. Hamlin of Oakland had been nominated as councilor for the Seventh District by written nomination filed with the secretary, signed by delegates Edward N. Ewer of Oakland and J. M. McCullough of Crockett. George Reinle of Oakland seconded the nomination and moved that the nominations be closed and that the secretary be instructed to cast the ballot for Oliver D. Hamlin; such motion was seconded by Harlan Shoemaker.

The secretary cast the ballot and the chair announced the election of Oliver D. Hamlin as councilor for the Seventh District for a term of three years.

7. Ninth District.—The secretary announced that Henry S. Rogers of Petaluma had been nominated as councilor for the Ninth District by written nomination filed with the secretary signed by delegates Charles C. Falk of Humboldt and J. W. Seawell of Sonoma. Robert Peers of Colfax seconded the nomination and moved that the nominations be closed and that the secretary be instructed to cast the ballot for Henry S. Rogers; such motion was seconded by Junius B. Harris.

The secretary cast the ballot and the chair announced the election of Henry S. Rogers as councilor for the Ninth District for a term of two years.

8. Councilors-at-Large.—(a) Fitch C. E. Mattison of Los Angeles nominated Harlan Shoemaker as councilor-at-large to succeed himself; such nomination was seconded by William T. McArthur.

T. C. Myers of Los Angeles nominated George Hunter of Los Angeles as councilor-at-large; such nomination was seconded by Fred B. Clark. Smith McMullin moved that the nominations be closed; such motion was duly seconded.

A ballot vote was then taken. Forty-one votes were cast for George Hunter and forty votes were cast for Harlan Shoemaker.

Charles Falk of Humboldt moved that the vote be recounted; such motion was seconded by Henry S. Rogers. A vote was then taken on the motion and the motion was defeated.

The chair announced the election of George G. Hunter of Los Angeles as councilor-at-large for a term of three years.

(b) I. R. Bancroft of Los Angeles nominated George H. Kress of Los Angeles as councilor-at-large to succeed himself; such nomination was seconded by Ferdinand Stabel of Redding. Clarence Toland moved that the nominations be closed and that the secretary be instructed to cast the ballot for George H. Kress; such motion was duly seconded.

The secretary cast the ballot and the chair announced the election of George H. Kress as councilor-at-large to succeed himself for a term of two years.

(c) Junius B. Harris of Sacramento nominated Joseph Catton of San Francisco as councilor-at-large

to succeed himself; such nomination was seconded by Walter W. Tourtillott, LeRoy Brooks moved that the nominations be closed and that the secretary be instructed to cast the ballot for Joseph Catton; such motion was seconded by T. Henshaw Kelly.

The secretary cast the ballot and the chair announced the election of Joseph Catton as councilor-at-large to succeed himself for a term of three years.

(d) H. E. Zaiser of Orange nominated R. A. Cushman of Santa Ana as councilor-at-large to succeed Charles Curtiss; such nomination was seconded by T. Henshaw Kelly. Percy T. Phillips moved that the nominations be closed and that the secretary be instructed to cast the ballot for R. A. Cushman; which motion was seconded by Joseph King.

The secretary cast the ballot and the chair announced the election of R. A. Cushman as councilor-at-large for a term of one year.

9. *Incumbent Councilors and Officers.*—Joseph King stated that in order that no question arise in the future regarding the terms of the incumbent councilors, as indicated by the chart, and the term of the president-elect he would introduce a blanket nomination covering officers and councilors holding office under the former Constitution and By-Laws. Doctor King then nominated Robert Peers as councilor-at-large for the term of two years; T. Henshaw Kelly as councilor-at-large for the term of one year; William Duffield as councilor of the Second District for the term of one year; Junius B. Harris as councilor of the Eighth District for the term of one year; and Morton R. Gibbons as president-elect until the time of his assumption of office of the president for the term of one year. Said nominations were seconded by George Reinle of Oakland and on motion of Joseph King, seconded by George Reinle and unanimously carried, the secretary was instructed to cast the ballot for each of said officers for each of their respective offices for the terms indicated. The secretary thereupon cast the ballots and the president announced the election of Robert Peers as councilor-at-large for the term of two years; T. Henshaw Kelly as councilor-at-large for the term of one year; William Duffield as councilor of the Second District for the term of one year; Junius B. Harris as councilor of the Eighth District for the term of one year; and Morton R. Gibbons as president-elect until the time of his assumption of the office of president, in which office he shall serve for the term of one year.

* * *

XII. *Delegates and Alternates to the American Medical Association.*—The chair announced that the next order of business would be the election of delegates and alternates to the American Medical Association to fill the places of delegates and alternates whose terms expire at the close of the 1929 session of the American Medical Association in July. The chair then announced that nominations were in order for the election of delegates to the 1930 and 1931 session of the American Medical Association.

(a) Walter B. Coffey of San Francisco nominated Dudley Smith of Oakland as delegate to the American Medical Association for the sessions of 1930 and 1931 inclusive; such nomination was seconded by Edward N. Ewer, who moved that the nominations be closed and that the secretary cast the ballot for Dudley Smith. Morton R. Gibbons seconded the motion.

The secretary cast the ballot and the chair announced the election of Dudley Smith of Oakland as delegate to the American Medical Association for the sessions of 1930 and 1931 inclusive.

(b) Junius B. Harris of Sacramento nominated Joseph Catton of San Francisco as alternate to the American Medical Association for Dudley Smith for the sessions of 1930 and 1931 inclusive; such nomination was seconded by Clarence Toland. Percy T. Phillips moved that the nominations be closed and

that the secretary cast the ballot for Joseph Catton; such motion was seconded by Morton R. Gibbons.

The secretary cast the ballot and the chair announced the election of Joseph Catton of San Francisco as alternate to the American Medical Association for Dudley Smith for the sessions of 1930 and 1931 inclusive.

(c) William E. Chamberlain of San Francisco nominated Albert Soilard of Los Angeles as delegate to the American Medical Association for the sessions of 1930 and 1931 inclusive; such nomination was seconded by Victor Vecki of San Francisco, who moved that the nominations be closed and that the secretary cast the ballot; such motion was seconded by Clarence Toland.

The secretary cast the ballot and the chair announced the election of Albert Soilard of Los Angeles as delegate to the American Medical Association for the sessions of 1930 and 1931 inclusive.

(d) George H. Kress nominated William Gilbert of Los Angeles as alternate to the American Medical Association for Albert Soilard for the sessions of 1930 and 1931 inclusive; such motion was seconded by George Reinle, who moved that the nominations be closed and that the secretary cast the ballot; which motion was duly seconded.

The secretary cast the ballot and the chair announced the election of William Gilbert of Los Angeles as alternate to the American Medical Association for Albert Soilard for the sessions of 1930 and 1931 inclusive.

(e) A. L. Bramkamp of Riverside nominated Martha Welpton of San Diego as delegate to the American Medical Association for the sessions of 1930 and 1931 inclusive; such nomination was seconded by Victor Vecki of San Francisco.

Joseph Pottenger of Monrovia nominated Fitch C. E. Mattison as delegate to the American Medical Association for the sessions of 1930 and 1931 inclusive; such nomination was seconded by William Duffield, who then moved that the nominations be closed; which motion was seconded by Walter B. Coffey.

A vote was then taken. Seventy-three votes were cast, Fitch C. E. Mattison receiving forty-seven votes and Martha Welpton 26.

Doctor Mattison having received the majority of the votes cast was declared elected delegate to the American Medical Association for the sessions of 1930 and 1931 inclusive.

(f) William T. McArthur nominated James F. Percy of Los Angeles as alternate to the American Medical Association for Fitch Mattison for the sessions of 1930 and 1931 inclusive; such nomination was seconded by Clarence Toland, who then moved that the nominations be closed and that the secretary cast the ballot, which motion was duly seconded.

The secretary cast the ballot and the chair announced the election of James F. Percy as alternate to the American Medical Association for Fitch Mattison for the sessions of 1930 and 1931 inclusive.

(g) The chair then announced that under the reapportionment of the American Medical Association, California was entitled to another delegate for the 1929 session, and nominations were now in order.

William Duffield of Los Angeles nominated Junius B. Harris of Sacramento as delegate to the American Medical Association for the sessions of 1929 and 1930 inclusive; such nomination was seconded by T. Henshaw Kelly, who then moved that the nominations be closed and that the secretary cast the ballot, which motion was duly seconded.

The secretary cast the ballot and the chair announced the election of Junius B. Harris of Sacramento as delegate to the American Medical Association for the sessions of 1929 and 1930 inclusive.

(h) E. M. Miller of Santa Clara nominated John Hunt Shephard of San Jose as alternate to the American Medical Association for Junius B. Harris for the sessions of 1929 and 1930 inclusive; such nomination was seconded by E. F. Ziegelman of San Mateo, who then moved that the nominations be closed and that

the secretary cast the ballot, which motion was seconded by Morton R. Gibbons.

The secretary cast the ballot and the chair announced the election of John Hunt Shephard as alternate to the American Medical Association for Junius B. Harris for the sessions of 1929 and 1930 inclusive.

* * *

XIII. Standing Committee Under New Constitution.—Doctor Duffield announced that under the new Constitution certain committees should receive the approval of the House of Delegates, but that as there was insufficient time to name the committees he wished to present the following resolution:

Resolved, That the House of Delegates empower the Council to fill the list of standing committees provided for in the new Constitution and By-Laws.

Doctor Duffield then moved for the adoption of the resolution, which motion was seconded by T. Henshaw Kelly, and carried unanimously.

* * *

XIV. Resolutions of Sympathy.—Percy T. Phillips moved that the president appoint a committee to prepare suitable resolutions of esteem and respect for Dr. John C. Yates, former member of the Association; which motion was seconded by T. Henshaw Kelly, and carried unanimously.

The president appointed as members of the committee, Percy T. Phillips of Santa Cruz (chairman), William Duffield of Los Angeles, and R. A. Cushman of Orange.

On motion of George Sabichi of Bakersfield, seconded by Junius B. Harris of Sacramento, the name of Francis A. Hamlin of Bakersfield was added to the resolution of sympathy.

On motion of William T. McArthur seconded by George H. Kress, the name of Henry G. Brainerd was added to the resolution of sympathy.

* * *

XV. Resolution of Appreciation.—Clarence Toland of Los Angeles presented the following resolution of appreciation.

Resolved, That the California Medical Association expresses its appreciation of the generous hospitality of the San Diego County Medical Society; and be it further

Resolved, That the members of the California Medical Association extend sincere thanks to the Arrangements Committee, Entertainment Committee, and the hotel management and staff for their generous hospitality and entertainment, which has made this fifty-eighth annual session of the California Medical Association one of the memorable events in its history; and to the press of the city of San Diego for its coöperation in the interest of scientific medicine; and be it further

Resolved, That the thanks of the California Medical Association be extended to our invited guests, William S. Thayer, president of the American Medical Association; John F. Binnie, Admiral E. R. Stitt, William J. Mayo, Reverend Howard B. Bard, John H. Musser, Frederick H. Falls, Robert C. Coffey, and Byrl R. Kirklin for their presence and their addresses, which have contributed in large measure to the success of this fifty-eighth session.

T. Henshaw Kelly then moved for the adoption of the resolution; which motion was seconded by Morton R. Gibbons and unanimously carried.

* * *

XVI. Presentation of the President.—The chair appointed T. Henshaw Kelly and LeRoy Brooks to escort the incoming president to the platform. Morton R. Gibbons was then presented to the House and acknowledged the great honor conferred upon

him by the Association and commended the outgoing administration.

* * *

XVII. Presentation of the President-Elect.—The chair appointed Mott Arnold and Joseph King to escort the incoming president-elect to the platform. Lyell C. Kinney was then presented to the House. Doctor Kinney expressed thanks for the recognition of the San Diego County Society and acknowledged the honor shown him by the Association.

* * *

XVIII. Reading and Adoption of Minutes.—The minutes of the session were then read and, there being no objection, were approved.

XIX. Adjournment.—There being no further business the meeting adjourned.

COMPONENT COUNTY SOCIETIES KERN COUNTY

Dr. Emmet Rixford, San Francisco surgeon, and also a professor of surgery at the Stanford University Medical School, addressed the society on the subject of "Coccidioides Granuloma." Doctor Rixford was the discoverer of this disease. He found it first in a case in the San Francisco Hospital in 1893. After considerable research work he was able to isolate the germ which causes the disease, although up to this time no cure has been found for it. Coccidioides is a disease which seems to be indigenous to the San Joaquin Valley, although a few isolated cases have been found in other parts of the United States. However, 99 per cent of the cases are found in California, and most of these in the San Joaquin Valley. Dr. Jos. Smith, superintendent of the Kern General Hospital, demonstrated a case of this disease and discussed some of the work done in the Kern General Hospital in the treatment of coccidioides where over fifty cases have been observed in the past ten years.

Dr. Fred H. DeLappe of Modesto, the councilor of the state medical society for this district, made a short talk before the society discussing some of the legislation affecting physicians now before the legislature at Sacramento.

Dr. Louis A. Packard of Bakersfield and Dr. A. L. Johnson of Taft were elected to membership in the Kern County Medical Society.

Upon arriving at Bakersfield Doctor Rixford made a trip to Stony Brook Retreat and visited the Kern County Preventorium, which he pronounced one of the finest buildings of its kind he had even seen. He made an automobile tour of Bakersfield and its environs, and was much impressed with the remarkable growth of Bakersfield since his last visit a number of years ago.

Almost all the members and a number who are not members of the society attended in order to hear Doctor Rixford's address, which was very much enjoyed by all. The largest number ever recorded at a meeting of the Kern County Medical Society was present on this occasion.

E. A. SCHAPER, Secretary.

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SAN BERNARDINO COUNTY

Minutes of the previous meeting were read and approved.

A notice of the next meeting of the Southern California Medical Association was read. It was decided that the May meeting of the San Bernardino County Medical Society would be held at the Redlands Community Hospital by invitation of the Physicians' Club of Redlands; that the date would be some time in May, shortly after the state medical meeting in Coro-

nado; that owing to the late May meeting the June meeting be omitted.

The committee on the Constitution reported that the revision should be entrusted to the delegates to the state meeting, and this report was adopted.

Communications were received, regarding medical legislation, from the Napa County Medical Society, Los Angeles Society for Neurology and Psychiatry, and from the Board of Medical Examiners. The secretary was instructed to communicate with our representatives in the Assembly and Senate as advised in these communications.

In regard to the resignation from the county medical society of Dr. William H. Craig, who offered his resignation because of retirement from practice, the secretary was instructed to write to Doctor Craig and to state that he had been made an honorary member of the San Bernardino Society and would continue to be carried on its roll.

A communication from the state regarding indigent physicians was read. As far as could be ascertained, there are no indigent physicians in this county.

The communication from Dr. Martha Welpton, chairman Public Welfare Committee of the California Medical Association was read. Dr. Mary Williamson was appointed a committee of one as Public Welfare Committee, and the secretary was directed to refer these data to her.

A communication from the American Mail Line regarding prospective attendance at the American Medical Association meeting in Portland was read. The secretary has forwarded a list of members of this society to the head office.

Mr. Burns of the State Board of Medical Examiners asked that a member of the county society accompany him to the office of the district attorney in the matter of filing a complaint of violation of the law. Doctor Abbott complied with this request.

The meeting adjourned at 1:30 o'clock.

The following bills are approved by the members of the San Bernardino County Medical Society:

Senate Bill No. 310 and Assembly Bill No. 260. The aim of this bill is to furnish proper medical supervision to helpless patients.

Senate Bill No. 214. This incorporates a one-year additional requirement in order to obtain a California certificate to practice medicine, said year to be spent in a hospital, in public health work, or in a laboratory vouched for by the school from which the applicant graduates.

Senate Bill No. 216. This bill, as amended, forbids beauty parlors to use any kind or type or form of electric appliance except galvanism in the removal of superfluous hair. Considerable opposition has arisen to this on the part of those operating beauty parlors over the fact that the bill prohibits the use of x-ray machines or appliances in the removal of superfluous hair, despite the fact that records throughout the United States show pathetic cases of permanent disfigurement arising from the use of x-ray apparatus on the innocent individuals who, through vanity, seek to have superfluous hair removed from the face, arms, legs, chest, etc. All dermatologists with whom we have communicated relate that the x-ray should be prohibited in the removal of superfluous hair.

A lien bill, now before the state legislature. This bill, if passed, would provide for the establishment of a lien against insurance carried by patients cared for by doctors and hospitals, said lien being for the purpose of settling accounts incurred by the patients. This is especially aimed at those transient patients who, following need of urgent medical attention, forget the rightful expense of hospital stay and the surgeon's fee.

A bill providing for a state subsidy for the care of tuberculous patients in city and county preventoria,

and in city and county sanatoria and convalescent homes.

Other bills were discussed and considered by the members present, and it was voted that the San Bernardino Medical Society would oppose the following measures:

Bill No. 309. This bill would interfere with the proper administration of medical science and menace the welfare of the innocent sufferers from disease that can only be treated properly by medical men.

Assembly Bill No. 628. This bill strikes out all reference now in the Medical Practice Act to the drugless practitioner and writes in a provision creating an "osteopathic physician" with educational requirements. The certificate to be issued will permit the holder to use antiseptics, etc., including narcotics, and will also permit the practice of minor surgery.

E. J. EYTINGE, Secretary.

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SAN DIEGO COUNTY

At the close of the state convention perhaps your correspondent can do no better than record the sentiment that he hears expressed on every hand, on the streets, and in the hospital corridors: that it was great to have the members from all over the state respond to our open door, and give us the inspiration of their presence and their thoughts for a few days. We have enjoyed every moment of the time you spent with us.

Come again when it pleases you; the latchstring is always out.

ROBERT POLLOCK.

*

SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was held Thursday evening at 8:30 o'clock, May 2, in the Medico-Dental Club Hall, 242 North Sutter Street, Stockton.

The meeting was called to order at 8:30 o'clock by Dr. C. B. Thompson, president, in the chair. Twenty were in attendance.

The minutes of the previous meeting were read and approved.

The secretary read the communication received from M. P. Shaughnessy, attorney of the society, relative to able-to-pay patients at San Joaquin County Hospital.

The chairman of the Legal Committee, Dr. R. T. McGurk, stated that the committee would render its report at the June meeting.

The application for membership of Paul R. Noeling of Linden, was read and referred to the committee on admission.

The chair presented Dr. George C. Hensel of the orthopedic staff of the University of California who gave an interesting discussion on "Arthritis." Roentgenograms of typical cases were demonstrated.

The present status of arthritis was discussed with an introduction mentioning its high prevalence among all classes and its extreme importance as a cause of disablement, pain and expense both to the individual, relatives, and the community. The confusion in classification and the present variety of terms mentioned in the nomenclature of this disease were tabulated and brought into a common relationship. Nichols and Richardson's terminology of proliferating or ankylosing arthritis and degenerative or nonankylosing arthritis were used as the basis of division for the two larger groups commonly met with. The relationship of the commonly used British and American terms to these two classes were defined and grouped. The technical nomenclature applicable when either type affects the spine were defined. That is, the spondylose rhizomelique or the Von Strumpell Marie type when the spine is involved in the proliferating type of the disease and the hypertrophic or Von

Bechterew type when the vertebral column is included in the degenerative arthritides.

The relationship of the proliferating type to focal infection was discussed. A certain group of this same type of arthritis have an infectious basis, as is commonly demonstrated by Neisser infections, where actual organisms can occasionally be cultured from joints.

Yet on the whole the influence of focal infection and the management of this type of case is often exaggerated to an extreme. Various causes from an experimental view have been thought to be factors and very likely are in many cases of this type. The question of metabolic changes, ductless gland disturbance, sugar tolerance, diet and intestinal derangement were discussed.

It was pointed out that many such factors may be an expression of general constitutional debility rather than isolated causes of a given case of arthritis. The many therapeutic practices in a general way were discussed as to the uses and abuses. Each case requires individual consideration as to the etiological factors. With this group of cases in the large sense, focal infections, gastro-intestinal and metabolic disturbances are the more suggestive isolated factors. In connection with drug treatment of this type of case, ortho-iodoxybenzoic acid was mentioned as offering the most hope from this angle of treatment. As successfully demonstrated by Yoemans and Young, it offers a definite indication of treatment in a selected group of proliferative cases in combination with hospitalization and orthopedic care. It was particularly stressed that in considering the various constitutional factors in causing or aggravating a given arthritis that the local care of these joints is of primary importance. The particular mechanical indication of treatment at the time will always be a matter for expert opinion and execution, and it was stressed that neglect of this consideration very often was responsible for the severe and crippling deformities that are always a danger and likelihood in this type of arthritis. Where the spine is involved in this type of the disease curative measures are more difficult than in the other joints, yet in the early stages amidoxyl should be used together with orthopedic attention to the spine in the interest of preventing crippling deformity which can be easily done though the disease cannot often be checked. In considering the degenerative or hypertrophic type it was pointed out that the etiology was the subject of still less certainty than in the proliferative types and that there is still less suggestion of a uniform or even occasional infectious origin.

The common occurrence of frankly traumatic, senile, and almost natural occurring types was stressed. The therapeutic indications as to general measures were again outlined and, excepting the mechanical form, faulty body chemistry was mentioned as likely the most frequent single factor in the etiology of the hypertrophic type. Vaccines and drugs were mentioned as being rather useless. Amidoxyl is definitely not indicated in this type of arthritis, excepting as a possible palliative measure for pain in such cases as may show a definite infectious origin, and such are very infrequent. Again the technical local care of involved joints was stressed. Though its necessity is not quite so urgent as in the proliferative type, nevertheless it should be the primary consideration in treatment. The technical indications in connection with the later pathology of this type of arthritis in their relationship to various joints were briefly discussed.

Operation is less often indicated in this type of arthritis than in the preceding ones. Mechanical alignment and correction and removal of loose bodies when they occur are definite indications.

Coxaemallum senilis is usually a special problem in each individual. Pseudo-arthrosis, reconstruction operation and arthrodesis were mentioned as having occasional usage.

Many questions were asked which Doctor Hensel answered in a very practical way. The chair ex-

pressed the appreciation and thanks of the society to the speaker of the evening. There being no further business the meeting adjourned at 10:15 o'clock.

FRED J. CONZELMANN, *Secretary.*

CHANGES IN MEMBERSHIP

New Members

Fresno County—Philip Sin Ching.
San Bernardino County—Harry W. Seiger.
San Diego County—Miriam Pool Huff.
San Francisco County—Chelsea D. Eaton.
Santa Barbara County—William H. Conser.
Santa Clara County—Richard T. Glycer.
Tuolumne County—George Levy.

Transferred Members

Joseph S. Rubin, from San Francisco to Los Angeles County.

Deaths

Anderson, Jennie H. Died at Los Angeles, March, 1929. Graduate of Colorado School of Medicine, Boulder-Denver, 1911. Licensed in California, 1912. Doctor Anderson was an affiliate member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Fottrell, Michael J. Died at San Francisco, May 19, 1929. Graduate of University of California Medical School, San Francisco, 1887. Licensed in California, 1887. Doctor Fottrell was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Newton, Frances Louise. Died at Sacramento, January 18, 1929. Graduate of Woman's Medical College of Pennsylvania, Philadelphia, 1895. Licensed in California, 1895. Doctor Newton was a member of the Yolo-Colusa County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Ritchie, Adam Marsden. Died at Pacific Grove, May 1, 1929. Graduate of Cooper Medical College, San Francisco, 1894. Licensed in California, 1894. Doctor Ritchie was a member of the Monterey County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Scroggs, Gustavus A. Died at Los Angeles, May 5, 1929. Graduate of Jefferson Medical College, Philadelphia, 1879. Licensed in California, 1901. Doctor Scroggs was a member of the Los Angeles County Medical Association and the California Medical Association.

OBITUARIES

John Melvin Gardner
1874-1929

Dr. John M. Gardner, member of the Santa Cruz County Society, died at the University of California Hospital, San Francisco, on May 8, 1929. A cerebral hemorrhage followed by pneumonia was the cause of death.

Doctor Gardner was born in Hillsdale, Virginia, fifty-five years ago. The degree in medicine was attained at the University of Nashville, Tennessee, in 1909. He came to California in 1910, locating in Lodi after marrying Dr. Harriet Brown in Eureka. In 1925 the doctor moved to Santa Cruz, practicing here as an eye, ear, nose, and throat specialist.

In addition to membership in the county and state societies, Doctor Gardner was quite prominent in various lay fraternal organizations. The Santa Cruz County Society has lost an appreciated member in his passing.

SAMUEL B. RANDALL.

John Francis Cowan

1880-1929

Dr. John Francis Cowan, clinical professor of surgery, died at Los Angeles on May 17, at the age of 49. His wife, and a son and daughter survive him.

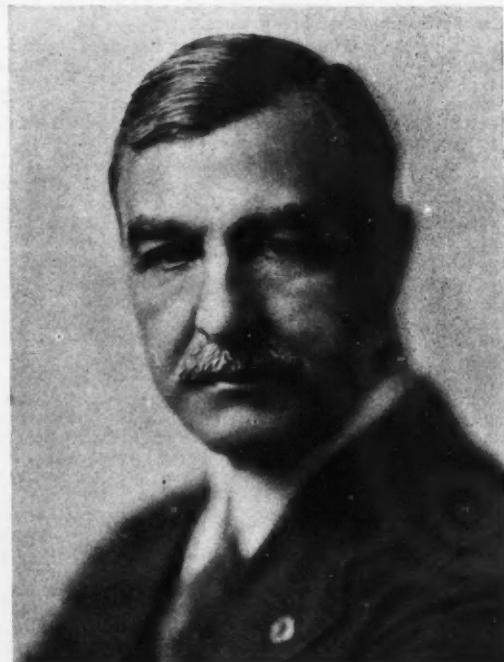
Doctor Cowan's untimely death has taken from us one who was universally loved and respected, and one who stood among the foremost of the surgeons of this coast. He was graduated from Stanford University in 1902 and was instructor in physiology there for the following four years. Then he went to Cornell University Medical School, where he received a degree of M. D. in 1910. The following two years he was intern at New York Hospital, and the next year was spent as resident surgeon there on the private side, as assistant to Dr. Frank Hartley. In 1913 he was invited to join the surgical staff of his Alma Mater, and came here as instructor in surgery. He passed through the grades of assistant and associate professor, and was made full professor in 1923. He resigned from the academic staff in 1926 to accept a clinical professorship, which he held up to the time of his death.



Doctor Cowan had a very excellent groundwork in biology, physiology, chemistry, and pathology, and his extensive clinical work in New York, as well as here, together with his years of research work, in which he was still actively engaged at the time of his death, qualified him for leadership in his profession, and seemed to mark him as the future outstanding surgeon of the coast. He was a conscientious and painstaking teacher, and was very much beloved by his students and by those associated with him on the faculty of Stanford Medical School. By the profession at large he was greatly respected both for his judgment and his skill.

Besides being an active member of the San Francisco County Medical Society and the state and national associations, he was a Fellow of the American Surgical Association and of the Pacific Coast Surgical Association. Modest and retiring to a degree, he enjoyed the confidence and love of all who knew him, and his death leaves a gap that will be slow in closing.

STANLEY STILLMAN.

**Richard George Brodrick**

1871-1929

On May 2, 1929, Dr. Richard George Brodrick was taken from us at the height of his career, age 58 years. He was a man who had shown his remarkable ability in several related fields. He received the degree of Doctor of Medicine from Cooper Medical College in 1892. During the following years, until 1899, he served as a medical officer in the United States Navy and as such participated in the battle of Manila Bay. After his retirement he devoted three years to graduate study in Vienna.

Returning to San Francisco he was selected as health officer during the stormy days of an epidemic of bubonic plague. The expedition and efficiency with which the necessary sanitary reforms were carried through was largely due to his tact and ability. As health officer, Doctor Brodrick became greatly interested in the construction of the new San Francisco Hospital and he added many admirable features to the plan. His interest was aroused to such an extent that he resigned as health officer and took over the management of the new institution when it was opened in 1915.

San Francisco owes Dr. Brodrick a heavy debt of gratitude for the standards which he established and which have been carried on to the present day.

Doctor Brodrick continued as superintendent of the San Francisco Hospital until 1919, when he was called to Alameda County to become director of hospitals and to plan the new county hospital on the other side of the bay. The Highland Hospital is a lasting monument of Doctor Brodrick's skill in planning and to his superb executive ability, to which also many other important hospitals testify which have been erected under his direction all along the Pacific Coast.

The esteem in which he was held by his confrères was shown by his election as president of the American Hospital Association in 1926.

Having finished his work in Alameda County, he accepted the invitation by Stanford University to take charge of their hospitals in 1927. This gave him an opportunity to develop a comprehensive plan for the future growth of the Stanford Medical School and its hospitals. It had just been decided to carry out

the first step of this projected development when he was stricken. His life was a full one, devoted to work and service to humanity.

Those of us who have had the great good fortune to know him intimately and to work with him will never forget the charm of his personality and the inspiration to progressive effort that he managed to convey to all who came in contact with him.

NEVADA STATE MEDICAL ASSOCIATION

R. R. CRAIG.....	President
W. A. SHAW.....	President-Elect
H. A. PARADIS.....	First Vice-President
R. P. ROANTREE.....	Second Vice-President
HORACE J. BROWN.....	Secretary-Treasurer
R. P. ROANTREE, D. A. TURNER, S. K. MORRISON.....	Trustees

COMPONENT COUNTY SOCIETIES WASHOE COUNTY

A joint meeting of the Washoe County Medical Society and the Nevada State Dental Society took place at the new home of C. E. Rhodes, D. D. S., on Mark Twain Avenue, Reno, on the evening of May 14, J. La Rue Robinson, M. D., presiding.

The object of the joint meeting was a get-together to discuss border-line medical and dental subjects of interest to both dentist and physician.

The program led with paper by John Tees, M. D., on "Infant Care." Doctor Tees' many years of specializing along the line of pediatrics made the paper interesting and practically adapted to those whose technical studies have not been so greatly elaborated as that of the essayist. An important review of the various commercial baby foods on the market, their adaptations for particular types of cases, modifications of the same with and without mother's milk, was dwelt upon at length. Also the nowadays much discussed subject of the vitamin element contained therein was brought out. The subject of pyloric spasm which occurs in some infants, its medical treatment with appropriate food and atropin likewise received a share of discussion. The paper was full of scientific suggestions.

The second paper to follow was given by the society's host, C. E. Rhodes, D. D. S. Doctor Rhodes in his paper on "The Teething Child and Care of the Mouth" went over the subject of primary and secondary dentition, pointing out the evils that could possibly arise from metastatic mouth infections, disordered digestion, chronic tonsil infections, and lastly the physical impediments to the child's chances in the school age as compared to the child who had been scientifically nourished, and whose mouth had received the same dental care that would be given to an adult. Doctor Rhodes said that simply because the patient was a child too many parents overlooked the child's right to receive the same care for health and comfort as that accorded the adult. The essayist and other dentists present were agreed that every town should have a child dental specialist. Doctor Carr, D. D. S., stated that many parents when bringing their children to a dentist expected that, as on railroads, children should be charged half rates.

An important point brought out by the essayist was the thumb-sucking habit of infants and young children. While the doctor did not theorize regarding morbid psychology as the underlying cause of this habit, the manifest result of mouth deformity was dwelt upon. This habit was prone to bring about tooth, jaw, and palate deformities. In some cases the upper teeth would project in an oblique front, the lower ones would appear to be pushed back from the up and down line of occlusion. Further, there would result palate deformities and a misshapen jaw which in later years would become a serious menace should artificial dentures ever be required.

The third and last paper was by Dr. M. R. Walker on the "Public School and the Child." As Doctor Walker has been the public school physician for the past twenty years, he was well fitted, from long ob-

servation relative to the community interest in the school child, to discuss the topic. Comparison of the underprivileged child in the home with the pampered youngster; the question of health and moral inheritances; the question of the general environment; of precocity and mental dullness; of the general interest by the Mothers' Clubs in child welfare; and the more sympathetic understanding of parents in every school community that health suggestions made for the sake of the child were not for personal gain were points presented. Such papers as Doctor Walker gave should be presented frequently before every Mothers' Club, and should stress health, the child's respect of law and of those above him, and reverence of the good, the true and the beautiful. If these points brought out by the essayist were dwelt upon in homes and schools, many young people would respect the better things of life.

The program concluded, the social hour followed. This was a most enjoyed affair. A delightful luncheon followed. Mrs. Rhodes was a most gracious hostess.

These functions encourage good attendance and bring the profession into closer contact. It was observed that many of the physicians and dentists have crossed the social dead line of formality, and many were calling each other by their front names.

We commend this type of combined social-professional meeting to the attention of all medical and dental societies.

THOMAS W. BATH, *Secretary*.

UTAH STATE MEDICAL ASSOCIATION

WILLIAM D. DONOHER, Salt Lake.....	President
H. P. KIRKLEY, Salt Lake.....	President-Elect
M. M. CRITCHLOW, Salt Lake.....	Secretary
J. U. GIESY, 701 Medical Arts Building, Salt Lake.....	Associate Editor for Utah

OFFICIAL NOTICE

An enormous amount of work has been gone through with by Dr. J. J. Galligan and his associates with a view of making the coming convention of the State Medical Association a success, provisional program of which is herewith announced. Judging by advance reports the meeting in July should be one of the best ever held, and the editor can only urge all members of the Association to make it a point to be present and join in the feast of both scientific data and good fellowship which will be dispensed.

Utah State Medical Association
Thirty-Fifth Annual Meeting at Salt Lake City
July 1, 2, 3, 1929, at Memory House
Salt Lake City

General chairman of Committee on Arrangements, J. J. Galligan, M. D.
Chairman of Publicity Committee, J. U. Giesy, M. D.

Chairman of Entertainment Committee, Sol G. Kahn, M. D.
Chairman of Banquet Committee, M. M. Nielson, M. D.

PROGRAM
George H. Dern, Governor of Utah—Address of Welcome.

W. S. Thayer, M. D., Baltimore, Maryland, president of the American Medical Association—1. Individualism and Cooperation in Medicine. 2. Reflections on Angina Pectoris.

Donald C. Balfour, M. D., Rochester, Minnesota—Some Surgical Aspects of Diseases of the Upper Abdomen.

R. L. Cecil, M. D., New York City—1. Serum Treatment of Pneumonia. 2. Etiology and Treatment of Chronic Arthritis.

L. L. Daines, M. D., Salt Lake City—Two papers to be announced.

John W. Duncan, M. D., Omaha, Nebraska—1. Spinal Anesthesia. 2. Fractures.

Temple Fay, M. D., and E. P. Pendergrass, M. D., Philadelphia—The Value of Encephalography in the Diagnosis of Lesions of the Brain.

Norman M. Keith, M. D., Rochester, Minnesota—Clinical Significance of Various Types of Hypertension.

Glenn E. Myers, M. D., Compton, California—1. Personality Changes in the Course of General Medical and Surgical Disorders. 2. Mental Hygiene Problems, Psychiatry and the General Practitioner.

Eugene P. Pendergrass, M. D., University of Pennsylvania, Philadelphia—Pneumoconiosis.

F. W. Schlutz, M. D., University of Minnesota, Minneapolis, Minnesota—1. Fundamental Factors Underlying the Development of Alimentary Disorders in Infancy and Childhood. 2. The Value of Present-Day Immunization Procedures Against Contagious Diseases.

Karl R. Werndorff, M. D., Council Bluffs, Iowa—Pathology of the Hip-Joint.

Arrangements are being made for a public meeting the night of July 1. The banquet will be held the night of July 2. Scientific meetings between 8 a. m. and 1 p. m. each day. There will be golf, trips, teas, etc., in the afternoons of the first two days.

M. M. CRITCHLOW, *Secretary.*

COMPONENT COUNTY SOCIETIES SALT LAKE COUNTY

The regular meeting of the Salt Lake County Medical Society was held at the Salt Lake County General Hospital, Salt Lake City, April 8.

The meeting was called to order at 8:05 p. m. by President C. M. Benedict. Forty-five members and eighteen visitors were present.

The minutes of the previous meetings on March 11 and March 25 were read and accepted without correction.

The chair turned over the program to R. J. Alexander, county physician. The program was as follows: Spinal Anesthesia, F. D. Spencer; Nephrolithiasis, J. P. Kerby; Hydronephrosis, F. A. Goeltz; Osteomyelitis of the Tibia, W. W. Stevenson; Tuberculosis of the Lung, M. M. Critchlow; Phrenectomy, Arthroplasty of the Elbow, Fracture of Epiphysis of Tibia, R. J. Alexander; Cerebrospinal Meningitis, B. E. Bonar; Carcinoma of Cecum, Clark Young; Congenital Heart Disease, Guy Van Scyoc.

A letter from the Chamber of Commerce announcing the annual clean-up campaign from April 1 to April 22 was read.

The meeting was adjourned at 9:55 p. m., after which refreshments were served by the hospital staff.

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The regular meeting of the Salt Lake County Medical Society was held in the Convention Room of the Newhouse Hotel, Salt Lake City, April 22.

The meeting was called to order at 8:15 p. m. by President C. M. Benedict. Forty-six members and six visitors were present.

Minutes of the previous meeting, April 8, were read and accepted without correction.

No clinical cases were reported.

F. A. Goeltz read a very interesting paper on "Hematuria," which was discussed by George Fister of Ogden, W. G. Schulte, J. P. Kerby, and John Z. Brown.

Mr. A. H. Lund read a paper entitled "Relationship of the Pharmacist to the Physician." This paper was thoroughly discussed by T. A. Flood, R. J. Alexander, E. F. Root, G. N. Curtis, M. M. Nielson, and Leaver Stauffer.

J. P. Kerby read a letter from the Castle Gate Fund Committee asking the society to set a fee schedule for patients requiring medical service. John Z. Brown moved that this matter be referred to the Fee Schedule Committee, and that the secretary be instructed to notify the Castle Gate Fund Committee that this had been done. Motion seconded and carried.

President C. M. Benedict announced that the meeting of Monday, May 27, would be a dinner meeting with the Weber County Medical Society, at which time the latter society would conduct the meeting.

T. D. Cunningham of Denver will talk on "Allergy" at this meeting.

The society then proceeded with the election of delegates for the 1929 convention of the Utah State Medical Association. Sol G. Kahn moved that the first thirteen men receiving the highest number of votes be elected delegates, and that the remaining members be elected alternates in the respective order in receiving ballots. Motion seconded and passed. Twenty members were nominated for these offices, and M. M. Nielson moved that the nomination be closed. The motion was seconded, and carried.

The following is a list of delegates and alternates elected to serve two years.

Delegates—C. M. Benedict, T. F. H. Morton, W. G. Schulte, J. P. Kerby, J. E. Jack, R. C. Pendleton, R. T. Woolsey, W. Christopherson, F. J. Curtis, S. G. Kahn, W. F. Beer, F. R. Slopansky, and R. J. Alexander.

Alternates: M. M. Nielson, T. A. Flood, C. L. Shields, L. N. Ossman, D. W. Henderson, G. N. Curtis, and C. J. Alabaugh.

The hold-over delegates to serve one year are W. L. Rich, L. J. Paul, S. C. Baldwin, A. C. Callister, Roy Groesbeck, E. F. Root, L. R. Cowan, E. M. Neher, and F. L. Peterson.

The meeting was adjourned at 10 p. m.

BARNET E. BONAR, *Secretary.*

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WEBER COUNTY

The meeting of the Weber County Medical Society was held at the Valley House, Huntsville, April 18. This was a joint meeting with the Weber County Dental Society, President A. H. Aland presiding. Dinner preceded the program.

Report of Committee.—Dr. J. D. Harding reported for the committee on group liability insurance. Mr. Haertack of the United States Fidelity and Guaranty Company stated that if twenty-five members insured with the company under a group plan, the net price for each doctor would be about \$18. Dr. Ezra Rich moved that this plan be followed, seconded by Dr. L. A. Smith. The motion failed to carry. Dr. E. P. Mills presented a plan to govern activities of school nurses; this was accepted without reading of the same. Dr. E. P. Mills made a motion that the society purchase an instrument for projecting microscopic sections on a screen. Dr. L. A. Smith discussed this motion. The motion failed to carry.

The program for the evening follows: "Dental Aspects of Infected Teeth," by Dr. W. S. Paine, discussed by Dr. E. E. Greenwell. "Teeth as a Source of Systemic Infection" was the title of a paper read by Dr. F. K. Bartlett, discussed by Dr. Ezra Rich. Dr. Sumner Gleason of Kaysville presented a paper on the "Care of Teeth in Children." He showed numerous x-rays of various deformities and plates of teeth before and after correction. Discussed by Dr. Eugene Smith.

This meeting was very much approved by all members, and it was the opinion of both physicians and dentists that a similar meeting should be held once a year. No definite action was taken. There were twenty-five physicians present and seventeen dentists.

G. M. FISTER, *Secretary.*

UTAH NEWS

The regular monthly meeting of the Holy Cross Hospital Clinical Association was held on the night of April 15, in the assembly room of the hospital.

A good attendance was present, including members and nurses.

The following program was presented: Diabetes Mellitus Complicated by Epidemic Meningitis—A Case Report, by Doctors T. W. Stevenson and H. C. Clayberg. A Clinical Case of Diagnosis, by Doctors L. F. Hummer and M. Johnson. Electrocardiographic Tracings, by Dr. R. M. Tandowsky. Demonstrations of Pathological Specimens, by Dr. T. A. Flood.

An invitation is extended to all members to invite friends to attend these monthly meetings as guests of the Association.

MISCELLANY

Items for the News column must be furnished by the twentieth of the preceding month. Under this department are grouped: Comment on Current and Recent Articles in the Journal; News; Medical Economics; Correspondence; Department of Public Health; California Board of Medical Examiners; and Twenty-Five Years Ago. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Summer Courses for Graduates in Medicine.—Members of the medical profession are cordially invited to attend any of the following lectures and clinics to be offered during the summer courses for graduates in medicine at the University of California Medical School from June 3 to June 29, 1929. All of the lectures will be held in Toland Hall, University of California Hospital, San Francisco.

On Wednesdays, from 11 a. m. to 1 p. m., clinicopathological conferences will be held in Cole Hall, Medical School Building, San Francisco.

Monday, June 3, 12 noon—Frank W. Lynch, M. D.: "Five-Year End-Results in the Treatment of Cervical Cancer." 8:15 p. m.—Gordon E. Hein, M. D.: "Arteriosclerotic Heart Disease."

Tuesday, June 4, 12 noon—Karl F. Meyer, Ph. D.: "The Present Status of Meningitis." 8:15 p. m.—Alfred C. Reed, M. D.: "Bacillary Dysentery."

Thursday, June 6, 12 noon—Wallace B. Smith, M. D.: "Acute Mastoiditis." 8:15 p. m.—Frederick C. Cordes, M. D.: "Emergency Treatment of Eye."

Friday, June 7, 12 noon—Edwin I. Bartlett, M. D.: "Breast Lesions: Their Diagnosis." 8:15 p. m.—J. C. Geiger, M. D.: "Modern Epidemiology and Tularemia."

Monday, June 10, 12 noon—Howard C. Naffziger, M. D.: "Diagnosis of Brain Tumors." 8:15 p. m.—J. C. Geiger, M. D.: "Food Poisoning."

Tuesday, June 11, 12 noon—Frank Hinman, M. D.: "The Conduct of a Routine Urological Study." 8:15 p. m.—Alfred C. Reed, M. D.: "Sprue."

Thursday, June 13, 12 noon—Montague S. Woolf, M. D.: "Manifestations and Diseases of the Colon and Rectum." 8:15 p. m.—Karl F. Meyer, Ph. D.: "Problems of Malta Fever."

Friday, June 14, 12 noon—Hans Lisser, M. D.: "Adult and Childhood Myxedema, Diagnosis, and Treatment." 8:15 p. m.—Charles E. Nixon, M. D.: "Neurological Aspects of Pernicious Anemia."

Monday, June 17, 12 noon—William Palmer Lucas, M. D.: "Problems and Fallacies of Infant Feeding." 8:15 p. m.—R. Emmet Allen, M. D.: "Diet in Chronic Disease."

Tuesday, June 18, 12 noon—Wallace I. Terry, M. D.: "Postoperative Pulmonary Complications." 8:15 p. m.—Glanville Y. Rusk, M. D.: "Obscure Conditions of the Lungs."

Thursday, June 20, 12 noon—Chauncey D. Leake, Ph. D.: "Recent Advances in Pharmacology and their Application to Medical Practices"—Part I. 8:15 p. m.—Charles L. Connor, M. D.: "The Newer Pathology of the Kidneys."

Friday, June 21, 12 noon—Chauncey D. Leake, Ph. D.: "Recent Advances in Pharmacology and their Application to Medical Practices"—Part II. 8:15 p. m.—Fred H. Kruse, M. D.: "Causes of Failure in the Medical Management of Peptic Ulcer."

Monday, June 24, 12 noon—Reginald Knight Smith, M. D.: "Problems in Obstetrics in Private Practice." 8:15 p. m.—Ernest H. Falconer, M. D.: "Treatment of Pernicious Anemia with Liver Extract."

Tuesday, June 25, 12 noon—Alfred H. Washburn, M. D.: "Purpura in Childhood." 8:15 p. m.—Eugene S. Kilgore, M. D.: "Precordial Pain."

Thursday, June 27, 12 noon—John C. Ruddock, M. D.: "Digitalis—Its Uses and Abuses." 8:15 p. m.—V. H. Podstata, M. D.: "Present-Day Mental Hygiene Program and the Physician."

Friday, June 28, 12 noon—Paul O'Leary, M. D., professor of dermatology, Mayo Foundation, Rochester, Minnesota—Dermatological Clinic. 8:15 p. m.—Udo J. Wile, M. D., professor of dermatology, University of Michigan Medical School, Ann Arbor, Michigan—Dermatological Clinic.

Formation of Pathologic Society in San Francisco.—On Monday, April 22, a meeting of physicians interested in pathology was held in the County Medical Society rooms in San Francisco, and there was formed an organization to be known as the San Francisco Pathologic Society.

A Constitution and By-Laws were adopted, and the following officers were elected: W. Ophüls, M. D., president; G. Y. Rusk, M. D., vice-president; Z. E. Bolin, M. D., secretary-treasurer. An Executive Committee was elected consisting of C. L. Connor, M. D., A. M. Moody, M. D., and W. T. Cummins, M. D.

The object of this society is to foster interest on the Pacific Coast. It is interesting to note that a similar society was formed in 1851 in San Francisco, and that this was one of the earliest medical organizations on the Pacific Coast.

Southern Pacific General Hospital Meeting.—The regular staff meeting of the Southern Pacific General Hospital was held on Wednesday, May 1, at 8:15 p. m. The program was as follows: Discussion of the clinical and pathological data of the fatalities for April; report of three neurosurgical cases, with demonstration of patients, by Dr. E. B. Towne; discussion of three interesting cases of lymphoid leukemia, interlobular empyema, and carcinoma of the thyroid with metastases to the skull, by Doctors P. K. Brown, G. R. Carson, L. B. Crow, W. W. Washburn, and D. W. Sooy; abstract of recent literature on clinical and laboratory medicine, by Dr. W. T. Cummins.

Course in Otorhinolaryngological Pathology to be Given by Dr. Joseph Beck.—At the invitation of the San Francisco County Medical Society, Eye, Ear, Nose, and Throat Section, Dr. Joseph Beck of Chicago has kindly consented to give a course in clinical pathology of the ear, nose, and throat. Details of this course, which was announced last month, follow.

The description of this course is best given in Doctor Beck's own words. He says, in speaking of the clinical demonstrations which make up the morning session of the course, "It is suggested that two or more of each type of pathological case be brought in so that I may have an opportunity to discuss a greater variety of pathologic states. It will be made clear to the students that this is a course on chronic pathology as applied to etiology, diagnosis, prognosis, and treatment. I have no intention of attempting to discuss methods of diagnosis or operations. Neither shall I discuss methods of treatment other than that which would come into the practical application of the underlying pathology."

"The course is given on three consecutive days—July 1, 2, and 3. There will be a two-hour session every morning from eight to ten, a clinical demon-

stration with discussion. A second session of one hour from six to seven in the evening will conclude each daily program.

"The first morning, diseases of the nose will be taken up, including deviation of the septum, chronic suppurative and nonsuppurative sinus disease, post-operative sinus disease with headache, and atrophic rhinitis.

"Any acute condition or neoplasm of the nose may be brought in and included for a brief presentation.

"Second morning, diseases of the throat, including tonsil and adenoid disease, luetic and tuberculous laryngitis, carcinoma of the larynx and neuroses and neuritides of the larynx.

"Any acute condition or neoplasm, etc., available may be brought in.

"Third morning, diseases of the ear, including chronic diseases of the external ear, chronic adhesive diseases of the middle ear, suppurative ear diseases (simple and complicated), and chronic nerve deafness (toxic, luetic, and otosclerotic).

"Any acute condition or neoplasm may be brought in for discussion."

In the afternoon session of the first and second day Doctor Beck will illustrate with his own projecting film, conditions discussed in the morning session.

At the request of Doctor Beck this course is limited to otolaryngologists. Those desiring to take this course will please send in their name to the secretary of the Eye, Ear, Nose, and Throat Section, San Francisco County Medical Society, 2180 Washington Street, San Francisco. There will be no fee charged for this course, but the number is limited. Please send in reservation as soon as possible.

The course will be given in the auditorium of the San Francisco County Medical Society building, 2180 Washington Street, on July 1, 2, and 3, from 8 to 10 in the morning, and from 6 to 7 at night.

Pacific Physiotherapy Association.—This association will hold its annual meeting at the Alexandria Hotel, Los Angeles, June 21 and 22, under the presidency of Dr. W. C. S. Koebig, with a banquet on Friday evening. An excellent program by men of national reputation is being prepared.

Preceding the meeting of the association the Western School of Physical Therapy will hold its eleventh annual session at the Alexandria, June 17 to 20, under the direction of Dr. Burton B. Grover of Colorado Springs. All physicians who are interested in the progress of physical therapy may obtain programs and full information by addressing Dr. Herbert V. Mellinger, 506 Detwiler Building, Los Angeles.

The Scientific Session of the American Heart Association will be held in Portland, Oregon, on July 9, 1929, during the meeting of the American Medical Association.

The American Association for the Study of Allergy will hold its next annual meeting in Portland, Oregon, Monday and Tuesday, July 8 and 9, 1929, at the time of the meeting of the American Medical Association. Further information may be obtained from the secretary, Warren T. Vaughan, Medical Arts Building, Richmond, Virginia.

The Thomas William Salmon Memorial.—Hon. George W. Wickesham announces the establishment of the Thomas William Salmon Memorial to provide recognition to the scientist who has made the greatest contribution in the fight against mental disease during each year. Awards are to be national and international, and will provide for the wider dissemination of the knowledge of mental hygiene and insanity through coöperation with the New York Academy of Medicine, in whose hands the administration of the \$100,000 fund is to be placed.

Summer Course for the Study of Tuberculosis offered by California Tuberculosis Association, under the direction of Allen K. Krause, M. D., Johns Hopkins Medical School, July 29 to August 9, inclusive.

Address all communications to California Tuberculosis Association, Griffith McKenzie Building, Fresno, California.

Monday, July 29, at Lane Hospital, San Francisco:
9 a. m.—Lecture, Allen K. Krause, M. D. 11 to 1
p. m.—Laboratory, Ernest Dickson, M. D.
2 p. m.—Physical Diagnosis, Philip H. Pierson, M. D., and W. R. P. Clark, M. D.
4 p. m.—Ear, Nose, and Throat, Edward C. Sewall, M. D., John A. Bacher, M. D., and Harold A. Fletcher, M. D.

Tuesday, July 30, at Lane Hospital:
9 a. m.—Lecture, Allen K. Krause, M. D. 11 to 1
p. m.—Laboratory, Ernest Dickson, M. D.
2 p. m.—Physical Diagnosis, Philip H. Pierson, M. D., and W. R. P. Clark, M. D.
4 p. m.—X-ray Interpretation, Robert R. Newell, M. D.

Wednesday, July 31, at San Francisco Hospital:
9 a. m.—Physical Diagnosis, U. C. Wards, Sydney J. Shipman, M. D., and Lewis M. Mace, M. D.
2 p. m.—Urological Tuberculosis, Frank Hinman, M. D.
4 p. m.—Allen K. Krause, M. D.

Thursday, August 1, at San Francisco Hospital:
9 a. m.—Physical Diagnosis, U. C. Wards, Sydney J. Shipman, M. D., and Lewis M. Mace, M. D.
2 p. m.—Surgery, Harold Brunn, M. D., and William B. Faulkner, M. D.
4 p. m.—Lecture, Allen K. Krause, M. D.

Friday, August 2:
Sanatorium and Preventorium visit to Arroyo Sanatorium.
Lecture, Tuberculosis Organizations, Harold G. Trimble, M. D.
Sanatorium Technique, Chesley Bush, M. D.

Monday, August 5, at Lane Hospital:
9 to 10 a. m.—Demonstration of Tuberculins, Allen K. Krause, M. D.
2 p. m.—Artificial Pneumothorax, Philip H. Pierson, M. D.
4 p. m.—Abdominal Disturbances, Walter W. Boardman, M. D.

Tuesday, August 6, at Lane Hospital:
9 a. m.—Lecture, Allen K. Krause, M. D. 11 a. m.—Surgical Tuberculosis, Emile F. Holman, M. D., and Leo Eloesser, M. D.
2 p. m.—Surgery, Eloesser and Holman, M. D.
4 p. m.—Tuberculosis of the Eye. (Lecturer to be announced).

Wednesday, August 7, at University of California Hospital or San Francisco Hospital:
9 a. m.—Children's Tuberculosis, Clain Gelston, M. D.
10 a. m.—Children's Tuberculosis, Ernest Wolff, M. D.
2 p. m.—X-ray Interpretation—Children, William E. Chamberlin, M. D.
4 p. m.—Lecture, Allen K. Krause, M. D.

Thursday, August 8, at San Francisco Hospital:
9 a. m.—Orthopedic Tuberculosis—Children. (Lecturer to be announced.)

Thursday, August 8, at San Francisco Hospital:
2 p. m.—X-ray Interpretation, Howard E. Ruggles, M. D., and Lloyd Bryan, M. D.

Friday, August 9, at Veterans Bureau Hospital:
Light Therapy. (Lecturer to be announced).

An evening dinner, with a question box, will be arranged at which Doctor Krause will answer questions.

The Brodrick Memorial Fund.—A contribution of \$1000 has been received by Stanford University to start the Brodrick Memorial Fund in honor of the late Dr. R. G. Brodrick, physician superintendent of Stanford University Hospital, and formerly president

of the American Hospital Association. The income from this fund is to be used for clinic free beds.

Further contributions to this fund will be gladly received in any amount, and should be sent to Dr. William Ophüls, Dean, Stanford University Medical School, 2398 Sacramento Street, San Francisco.

Los Angeles Society for Neurology and Psychiatry Dinner.—On May 15, Dr. Richard Dewey of La Cañada was given a complimentary dinner by the Los Angeles Society for Neurology and Psychiatry at the University Club. He is now in his eighty-fourth year, and has recently passed quite successfully through a pyloric perforation and a gastro-enterostomy. He related at the dinner some of his experiences as a volunteer assistant surgeon in the Franco-Prussian War in 1870 and 1871 in the military hospitals in France and Germany.

CORRESPONDENCE

STATE MEDICAL LIBRARY—SOME LETTERS THEREON

Note.—The following letters are here printed because they had to do with Senate Bill 842 (state medical library bill). These letters are printed for the information of members of the California Medical Association.

I. Letter from Doctor Kress to Acting State Librarian and to Deputy Superintendent of Public Instruction.
Los Angeles, April 23, 1929.

Miss Mabel R. Gillis,
Assistant Librarian California State Library,
Sacramento, California.

Mr. Sam H. Cohn,
California Deputy Superintendent of Public
Instruction and Education,
Sacramento, California.

Dear Miss Gillis and Mr. Cohn:

Last week I wrote Dr. C. B. Pinkham, secretary of the California Board of Medical Examiners, in reference to Senate Bill No. 842, providing for a state medical library.

In his reply to us he states: "We can say, however, that last week we were called in consultation by Miss Gillis of the State Library and Mr. Cohn of the Department of Education, neither of whom seemed particularly impressed with the practicability of the medical library idea. We told them, as we have told everyone else, that the Board of Medical Examiners is not opposing the bill, nor have we spoken to any legislators in opposition to the bill."

I am quoting from this letter because under separate cover I am sending to each of you a copy of *CALIFORNIA AND WESTERN MEDICINE* of date of April 1929, on page 266 of which you will find some editorial comments concerning the state medical library bill.

I have also sent you a copy of a little leaflet on this subject that was sent out to members of the California Medical Association.

As a member of the California Medical Association I am very much interested in this proposed state medical library. On that account I am also interested in the viewpoints of all those who do not favor such a state medical library.

If it be not asking too great a favor, would you kindly write me and let me know of any of your objections to such a state medical library?

From my standpoint and from the standpoint of many other members of the medical profession it is hard to conceive any form of state library activity which could be of such great service to the interests of education and to the interests of citizens of California as this proposed state medical library.

In equal measure we are convinced that it should be a real part and parcel of the state library at Sacramento, which is the seat of state government, and that it should be part and parcel of the general state library which already exists at Sacramento, and which

has all the machinery of operation to carry on its work.

We hope that as you read the comments in the state journal and in the leaflet which I sent you, you will be able to visualize somewhat better the plan which we have in our minds.

The matter will be also discussed in the May issue of *CALIFORNIA AND WESTERN MEDICINE*, because the proposition is one of major importance to the further development of scientific medicine in California.

With thanks for your kind attention to this,
Cordially yours,
GEORGE H. KRESS, M. D.

II. Reply from Assistant State Librarian. Objections to State Medical Library Bill (S. B. No. 842).

Department of Finance
California State Library

Sacramento, April 26, 1929.

Dr. George H. Kress,
245 Bradbury Building,
Los Angeles, California.

My dear Doctor Kress:

When asked about the state medical library bill I have expressed my opinion, which is as follows:

For some years the state library bought medical books. You know from your own experience how expensive they are and how difficult it is to keep a medical collection up to date. We had practically no call for medical literature. Consequently we finally decided that it was the proper course to discontinue buying medical books. Thereafter we referred the few people who called here for medical literature to the already existing medical libraries, particularly the Lane medical library, which has been very generous in lending its books throughout the state. From our experience, then, of some little time ago we feel that there is very little call for medical books from physicians generally. Our belief is that a medical library is of most importance when it is in connection with a medical school. It is accordingly our feeling that any money expended on a medical library should be used to build up those already in existence rather than for starting a new organization. It would be impossible to acquire the old books of the greatest historical interest. Medical books of today are expensive and, as I understand it from medical men, soon out of date. While here at the state library we do have the machinery for sending out books, it is my opinion that it would be many years before medical men could be induced to turn to the state library for their literature. Even the local men are so used to sending to San Francisco for their books, that I think they would naturally continue to do so. Also it would be many years before we could build up a reference collection that would equal what is already available. My whole point is that it seems a needless duplication to put this money into a medical library when we already have medical libraries in the state which answer our needs but which could be very much helped by some of this money if it could be diverted to them.

Sincerely yours,
MABEL R. GILLIS,
Acting State Librarian.

P. S.—I am sure that you realize that to get the fullest use of a medical library it would be necessary to have a trained medical librarian. To do the specialized reference work which your arguments suggest a person should be familiar with medical literature. Naturally we have no one on the staff who is, and at any rate the building up of a special library of this sort would require more help than we have. Money for additional help would have to be taken from the fund turned over for the purposes of the medical library. This would, of course, reduce the amount of money available for books and would be another indication of duplication, since the existing medical libraries already have their trained staffs of people who are accustomed to handling medical literature.

I would be very glad to talk with you some time on this matter and to tell you more about our plan of

general library service which tries to divide the field so that the various libraries will not be duplicating material but will be contributing to the service by taking care of their own particular fields.

III. Letter from Doctor Kress to Assistant Librarian Gillis, answering some of her objections to State Medical Library Bill (S. B. No. 842).

Los Angeles, April 29, 1929.

Miss Mabel R. Gillis,
State Librarian,
Sacramento, California.
Dear Miss Gillis:

Thank you very much for your letter of April 26 relative to the proposed state medical library. I regret that I cannot share the viewpoints which you express. It seems to me that you are in error in some of your conclusions because of lack of knowledge of the medical profession's viewpoints on these matters.

Let me explain myself somewhat more fully, even though the thoughts be somewhat at random:

1. Your experience at Sacramento in regard to the use of medical books by members of the Sacramento profession cannot be taken as a guide. When a medical man wants books or literature he wants a somewhat comprehensive presentation of the subject-matter in which he is interested. He wants something more than one or two antiquated textbooks. So far as I can learn, an efficient up-to-date medical library has never existed at Sacramento; so naturally our Sacramento colleagues would wish to utilize the facilities of the Lane Medical Library.

2. You state that it is your belief that a medical library is of most importance when it is in connection with a medical school.

Most of us who have been connected with teaching institutions and have at the same time had a wide experience with members of the medical profession and in organized medicine, hold quite a different opinion. A medical student has his work cut out for him when he confines his acquisition of knowledge to standard works. His knowledge of medicine is so incomplete that he is not in position, as an undergraduate, to attempt to read medical literature in general.

3. You state that money for a medical library should be used to build up those libraries already in existence.

We are in agreement with that thought, but we would accomplish this by having the state medical library coöperate with the Lane, Barlow, and University of California libraries in such fashion that duplication will be kept down to a minimum.

4. You state that it is your opinion that it would be many years before medical men could be induced to turn to the state library for their literature.

You probably have the official journal of the California Medical Association, which is known as CALIFORNIA AND WESTERN MEDICINE, on your shelves. That journal reaches more than four thousand ethical physicians every month. A state library column could be inaugurated therein, and within a few months it would be possible to induce many, many men in the profession from one end of the state to the other to avail themselves of the privileges of the state medical library at Sacramento. All of that is a matter of publicity; and, with the state medical association in back of the state medical library, we feel quite satisfied that the component county societies and their members would be very glad to avail themselves of its use.

5. We believe it would be possible to build up a state medical library that could render efficient service to members of the profession from one end of the state to the other. It would not be necessary to expend money in duplicating expensive works that are now in the Lane or other medical libraries.

6. You write that you would like to see the money diverted to some of the medical libraries already existent in the state.

I know of no way in which state money could be diverted into such private institutions. I mentioned

this point in an editorial which will appear in the May issue of CALIFORNIA AND WESTERN MEDICINE.

7. We appreciate, as do you, that it is necessary to have a trained medical librarian. However, the employment of a trained medical librarian is no different than the employment of a librarian trained in some other line of library work.

We realize that some of the money in this initial appropriation would necessarily be taken from the fund which it is desired to allocate from the reserve resources of the California Board of Medical Examiners to the state library. It is our belief, however, that funds will continue to come for the perpetuation of the library from the reserve funds of the State Board of Medical Examiners, because all we need to do is to again reestablish our two-dollar-a-year tax which was done away with at the last session of the legislature, and this would help bring in a goodly income each year.

8. Thank you very much for your invitation to have me talk over this some time, but I rarely get to Sacramento.

I am taking the liberty, however, of sending a copy of this letter to Dr. June Harris, who is a member of a local committee of the medical profession, and who is on the legislative committee of the California Medical Association, and who is particularly interested in this Senate Bill 842, which would provide for a state medical library division of the state general library.

I hope it will be possible for you to have a conference with Doctor Harris and his colleagues, because I believe that when you visualize this situation as we members of the medical profession outline it in our minds, you will be willing to coöperate with us, in fullest measure.

Cordially yours,
GEORGE H. KRESS, M. D.

IV. Letter of State Deputy Superintendent of Public Instruction giving his objections to the bill.

(Letterhead of the Department of Education
State of California)

Post Office Box 615,
Sacramento, May 2, 1929.

George H. Kress, M. D.,
245 Bradbury Building,
Los Angeles, California.

Dear Doctor Kress:

I have your letter of April 23 and have a copy of Miss Gillis' reply thereto.

Inasmuch as Miss Gillis and I discussed this measure very carefully prior to the receipt of your letter, her reply is in effect the same as my reply would be, with the added knowledge which has come from her long service as assistant librarian.

May I make clear, if it is not already clear to you, that both Miss Gillis and myself are in entire sympathy with you in your desire to expend the surplus funds for a medical library. The only real point of difference is that Miss Gillis and I both feel that the library should be where the students are. If the amount of money you desire to expend were to be put into books which could be easily obtained by the students in the various medical schools this department would be strongly in favor of the expenditure of the money.

It is merely that there is a difference of opinion between you and us. Past experience has indicated that medical books have not been of much service when purchased by the state library or when distributed from the state library.

If I can serve you, assuming that you are convinced of the reasonableness of our position, I shall be very glad to do so in seeking to have this measure amended and passed. But two weeks remain of the present session and any changes which we may agree upon should be determined as soon as possible.

Very truly yours,
SAM H. COHN,
Deputy Superintendent of Public Instruction.

[Editors' Note.—On the eve of the state medical meeting, the above letter was not answered.]

V. Letter from Doctor Pinkham, secretary of Board of Medical Examiners, State of California, regarding income from annual license tax against doctors of medicine.

San Francisco, California,
May 18, 1929.

Yours of May 17; Re: Annual Registration.
Dear Doctor Kress:

We received your letter at 11 a. m. Saturday, and could only refer to the annual report of the Board of Medical Examiners published in each issue of the directory in order to report the receipts from annual tax during the past ten years ending December 31, 1928, which was tabulated as follows:

1918.....	\$ 17,201.39
1919.....	20,280.27
1920.....	18,053.05
1921.....	20,302.39
1922.....	18,421.02
1923.....	17,154.90
1924.....	23,555.37
1925.....	19,961.93
1926.....	22,227.36
1927.....	13,410.08
1928.....	12,562.89
Total for ten years.....	\$203,130.65

In the above tabulation we have combined the receipts for annual tax with the receipt for delinquent tax. The reduction in the 1927 receipts is due to the legislature having reduced the annual tax from \$2 to \$1.

In reply to your query as to how many licensed M. D.'s there are in California, our records compiled for 1929 show that there are 8001 graduates of medical schools licensed as physicians and surgeons practicing in California, and in addition to this list there are 1701 licensed in California, but located in other states.

C. B. PINKHAM, M. D.,
Secretary-Treasurer.

[Editors' Note.—From the above figures it is noted that the licensed physicians of California have practically paid in a total sum about equal to that now in the reserve fund of the state examining board.]

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. II, No. 6, June 1904

From some editorial notes:

Constitution and By-Laws.—At the Paso Robles meeting of the state society the new Constitution and By-Laws, practically as recommended and with only minor alterations—mostly of phraseology—was adopted. This action is exceedingly important, for many reasons. The word "regular" was stricken from the document, and the personnel of the membership in county societies is placed absolutely in the hands of each county society. Every legally qualified practitioner of medicine who does not claim to practice any "pathy," should be eligible to membership. . . .

Synthetic Remedies.—The "newer *materia medica*," largely composed of synthetics and coal-tar derivatives, is both an interesting and a staggering problem. Many men of excellent judgment and cool, far-seeing calculation, have expressed the opinion that these newer chemicals are the *materia medica* of the future, and that their introduction and use will go far toward making of medicine a more exact science. This may or may not be true. . . .

Association Journals.—We, in the West, are greatly favored of Divine Providence in many ways. We are not quite so narrow-minded and hidebound as some of our friends and professional relatives in

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

the East, where, especially in New York, harmonious organization has been prevented for a number of years largely through the small and narrow-minded intellect of a few men. . . .

The Revised Constitution.—At the May meeting of the San Francisco County Medical Society, amendments to the Constitution and By-Laws of the society were introduced. . . .

All county societies now have the privilege of electing to membership any legally qualified physician who does not practice nor claim to practice, nor advertise himself as being connected with any special and particular school of medicine. . . .

From an article on "Pure Food Law" by M. E. Jaffa, University of California, Berkeley:

The measure, in brief, provides for the prevention of adulteration, misbranding and imitation of foods and food materials, and for regulating interstate traffic therein. . . .

From the reports of the secretary of the Medical Society of the State of California at the thirty-fourth annual session at Paso Robles, April, 1904:

Report of Secretary.—To the Officers and Delegates of the Legislative Branch of the Medical Society of the State of California:

I herewith submit my annual report:

Pursuant to the policy of the Constitution, the work of the organization of county societies has proceeded energetically during the past year, and since our last meeting fourteen new county societies have been affiliated. They are as follows: Butte, with a membership of 15; Kern, 16; Kings, 9; Mendocino, 20; Merced, 9; Monterey, 20; Napa, 22; San Benito, 10; San Luis Obispo, 14; Santa Cruz, 19; Shasta, 16; Sonoma, 46; Ventura, 15; Yolo, 10, thus giving the society an increase of 241 in membership through the medium of new societies organized. . . .

Report of the Publication Committee.—The alternate plan was to set pretty high advertising rates; a high standard of ethics for the advertising pages; prosecute an energetic campaign for good, high-class advertising; stimulate organization throughout the state; publish the very best journal that time and hard work could make; invest more money for the first two or three years than would be called for by the other plan, but eventually secure a self-supporting publication that would not be a source of expense to the society after the investment of the first few years. This latter plan was adopted as the better business policy. . . .

Report of the Memorial Committee, J. Lambert Asay, M. D., Chairman.

There comes a time in our deliberations when the busy cares of association work and the consideration of scientific problems should be laid aside for a few brief moments, that we may hearken to the voice of sorrow and pay tribute to our dead. . . .

The life of the physician is by no means conducive to longevity. Every step in his pathway is beset by hazard. Each sleepless night, every anxious vigil over disease and suffering, the repeated drafts upon the vital forces by the conscientious discharge of duties, are sure to lessen the number of his days. Yet though the sum of his years be few, there is condensed in this short life more ripened experience and a greater familiarity with human nature and impulses, than is given to those of other pursuits or professions who have reached beyond their three score and ten. . . .

From reports of county medical societies:

Sacramento County.—The Sacramento Society for Medical Improvement met in regular session at the office of Dr. W. A. Briggs on March 17, it being also the annual meeting of the society. . . .

The paper of the evening was read by Dr. Herbert C. Moffitt of San Francisco, on "Some Un-

usual Forms of Exophthalmic Goiter—Their Diagnosis and Treatment." The discussion was opened by Dr. W. E. Bates of Davisville and Dr. S. E. Simmons, and participated in by many present. . . .

DEPARTMENT OF PUBLIC HEALTH

By W. M. DICKIE, M. D., Director

Bacteriological Laboratory Makes Many Examinations.—The Bacteriological Laboratory of the California State Department of Public Health makes bacteriological examinations for all communities of California having populations less than 20,000. The bulk of the work carried on by the laboratory, therefore, is for rural communities and for small towns which are unable to provide the expensive equipment and the expert technical service that the laboratory must provide. Much of the bacteriological work for state institutions is also done in the state laboratory. The purposes of most of the examinations are two-fold: (1) As an aid to physicians in establishing correct diagnoses of cases of communicable diseases. (2) As an aid to health officers in the enforcement of measures for the control of the communicable diseases, such as release from quarantine which may be dependent upon negative findings in examinations of specimens from a quarantine patient.

During the first two months of this year nearly 8000 specimens were examined in the State Bacteriological Laboratory. More than 5000 of these were examinations of blood for the diagnosis of syphilis (Wassermann tests). Most of these were from patients in state hospitals, state prisons, reform schools, and other institutions. The large number of these examinations indicates the high type of medical work that the state is giving to its wards, and it also indicates the valuable co-operative work accomplished between the various units of the state departments.

During the period mentioned more than 1500 examinations were made of nose and throat cultures for diphtheria. While some of these examinations were made for the purpose of establishing diagnoses, most of them were made for the purpose of determining the possibility of release of diphtheria patients from quarantine. Negative results in two specimens taken at least forty-eight hours apart are required before a diphtheria patient can be released from quarantine. Nearly 400 examinations were of sputum for cases suspected of tuberculosis and 200 of them were of blood and excreta made in connection with work in typhoid fever.

In addition to these examinations, several thousand examinations were made in the laboratory during January and February for the purpose of determining the presence of intestinal protozoa and worms. Since the World War there is an apparent increase in the number of individuals who may harbor intestinal protozoa. Many members of the medical profession have indicated an intense interest in the problems associated with intestinal protozoa and the large volume of work accomplished in the examination of specimens submitted to the laboratory indicates the importance of this work from a medical and public health point of view.

Many other types of examinations are performed in the laboratory, such as the examination of dogs' heads to prove the diagnosis of rabies, and the examination of rats and ground squirrels in order to detect the possible presence of plague. Examinations for malaria, pneumonia, anthrax, dysentery, trichinosis, tularemia, undulant fever, and many other diseases are also performed regularly in the state laboratory.

Influenza Increases Deaths from Communicable Diseases in 1928.—Deaths from communicable diseases in California in 1928 total 14,745, as against 12,797 for the year 1927. The increase is due to the many deaths from influenza and pneumonia that oc-

curred in the fall of 1928, when influenza was widely prevalent. The deaths from influenza and pneumonia alone in 1928 total 6588. Appreciable decreases are noted in deaths from measles, diphtheria, and poliomyelitis. An increased mortality is noted in whooping-cough and epidemic meningitis.

Nineteen Hundred and Twenty-Eight Brings Low Typhoid Fever Death Rate.—Typhoid fever death rate in California for 1928 is 2.4 per hundred thousand population, the same rate as for 1927. When it is considered that more than thirty-four people out of every hundred thousand population died of typhoid fever in 1906 the remarkable lowering of the death rate proves the life-saving value in the institution of measures for the prevention of infectious intestinal disease.

A water-borne outbreak of typhoid fever has not occurred in California in five years. Cases of milk-borne typhoid fever continue to occur with more or less regularity and probably will occur until such time as adequate safeguards to public milk supplies are provided. The physical examination of all food handlers would undoubtedly contribute greatly to further reductions in typhoid mortality. Too much credit cannot be given to the purveyors of public water supplies for their successful activities in the delivery of pure water to the consuming public. Similar credit is awaiting the purveyors of public milk supplies.

The President's Proclamation—By the President of the United States of America—A Proclamation.—Whereas, The future of our nation rests with the children of today; and

Whereas, The good health and protection of childhood is fundamental to national welfare, and the march forward of our country must be upon the feet of children; and

Whereas, A joint resolution of Congress authorizes and requests the President of the United States to proclaim annually May 1 as Child Health Day; now

Therefore, I, Herbert Hoover, President of the United States of America, do hereby designate May 1 of this year as Child Health Day and do invite the people of the United States and all agencies and organizations interested in this most important subject to make every reasonable effort to bring about a nation-wide understanding of the fundamental significance of healthy childhood and of the importance of the conservation of the health and physical vigor of our boys and girls throughout every day of the year.

In testimony whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington this twenty-fifth day of March in the year of our Lord one thousand nine hundred and twenty-nine, and of the independence of the United States of America the one hundred and fifty-third.

By the President,
HERBERT HOOVER.

FRANK B. KELLOGG,
Secretary of State.

Tehachapi Has a New Health Officer.—Dr. R. G. Doupe has been appointed city health officer of Tehachapi to succeed Dr. Clara M. Rinehart.

Successful Vaccination Prevents Smallpox.—During the nine years 1920-1928, inclusive, 33,546 cases of smallpox were reported in California; 406 of these cases were fatal. The California State Department of Public Health has secured vaccination histories for all of these cases with the exception of 482, which are not available. The histories of the 33,064 cases that are available show that 30,867, or 93.36 per cent, of these smallpox patients were never vaccinated; 1911, or 5.78 per cent, were vaccinated more than seven years preceding their attacks and 286, or 0.86 per cent, were vaccinated within seven years preceding their attacks.

Communicable Disease Reports for March 1929:	
Chickenpox	2258
Diphtheria	185
Encephalitis (epidemic)	4
Measles	300
Meningitis (epidemic)	80
Poliomyelitis	3
Scarlet fever	1373
Smallpox	258
Typhoid fever	18
Whooping-cough	1165

Chickenpox, mumps, scarlet fever, and whooping-cough continue along lines of high prevalence. Improvement is noted in the reporting of the venereal diseases. Epidemic meningitis cases are more widely scattered.

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. PINKHAM, M. D.
Secretary of the Board

News Items, Doctors of Medicine, June 1929

Examiner Bureau, Sacramento, May 14.—The Administration's organization program for the 1929 session was virtually completed today when Governor Young signed three bills, establishing as many new departments in the State Government, the Department of Military and Veterans' Affairs, the Department of Professional and Vocational Standards, and the Department of Investments.—*San Francisco Examiner*, May 15, 1929.

The Cross of the Order of the Crown of Italy was yesterday pinned on Dr. Langley Porter, San Francisco physician, at a luncheon of the Italian-American Society in the Fairmont Hotel. . . . The insignia presented to Doctor Porter by the Acting Consul-General for Italy, Cavalier Alberto Mellini Ponce de Leon, was conferred by King Victor Emmanuel of Italy for distinguished services in fostering scientific relations between the United States and Italy.—*San Francisco Chronicle*, April 11, 1929.

Dr. Granville McGowan, Los Angeles physician, has the permission of Attorney-General U. S. Webb today to bring quo warranto proceedings to determine the right of a corporation to practice medicine in California. The corporation which Doctor McGowan proposes to bring suit against is the Medical Service Incorporation, Inc., of Los Angeles (*San Francisco Call*, May 3, 1929). (Previous entry, "News Items," November 1926.)

Through the earnest coöperation of Governor C. C. Young and his administration forces, California has leaped ahead at this session of the state legislature as foremost in the essential, practical strengthening of the battle against the illicit narcotic traffic evil. . . . Among some of the major items in the long list of accomplishments are to be noted:

1. Codification of the state narcotic laws.
2. Creation of post of Chief of the Narcotic Law Enforcement Division, granting to chief and inspectors full state peace officers' powers.
3. Placing of veronal on the proscribed list of drugs and forbidding general sale.
4. Providing for (presentation of) evidence before State Medical Examiners Board of violation of federal narcotic law.
5. Provision to continue by State Legislative Committee of investigations in narcotic traffic.
6. Further study of methods of coöperation with the United States Government by state enforcement officials.
7. General toning of the penal laws.
8. Policy strengthened as to punishment of narcotic law violators in respect to jail and prison sentences rather than by fines, which are deemed merely "licenses" to break the law.
9. Stiffening of prosecutions by courts.—*San Francisco Examiner*, May 4, 1929.

A verdict recommending that Dr. P. S. Traxler and Dr. R. S. Lanterman, Glendale physicians, be held and prosecuted according to law, was returned by the coroner's jury, which heard testimony in the inquest held today at the coroner's office in Los Angeles in the death of Miss Delphine Walsh, 22-year-old dancer of Los Angeles, who died yesterday in a hospital in this city. The jury found that Miss Walsh came to her death as the result of acute peritonitis following an illegal operation performed by Doctor Traxler, assisted by Doctor Lanterman (*Glendale News-Press*, May 4, 1929). The records of the Board of Medical Examiners show the license of Roy S. Lanterman was revoked on October 5, 1916, following a hearing on charges of an illegal operation. The action of the board was sustained by the court (36 Cal. Appellate, 472). Upon numerous petitions, supported by an overwhelming number of citizens, the board finally restored Doctor Lanterman's license on December 21, 1921.

Located in a cabin atop Saddle Rock Peak, off Los Flores Canyon, Dr. James H. Lloyd, well-known Chicago physician, was arrested yesterday afternoon for Chicago federal authorities. . . . Search for Doctor Lloyd had extended throughout the continent. The police have notified the federal authorities in Chicago of the arrest. Doctor Lloyd is said to have jumped bail recently and disappeared.—*Los Angeles Examiner*, April 18, 1929.

The judgment of the Superior Court restoring his license to Dr. Clayton Wheeler, San Francisco gland specialist, after the State Board of Medical Examiners revoked it, was upheld by the State District Court of Appeals yesterday, when it dismissed the appeal from the lower court's action filed by the Medical Board.—*San Francisco Chronicle*, April 16, 1929.

Indicted by the El Dorado County Grand Jury on three charges of grand theft, involving sums said to total more than \$13,000, Dr. Joseph T. Wrenn, former superintendent of the El Dorado County Hospital, was arrested here last night.—*San Francisco Examiner*, May 8, 1929.

General News Items

Found guilty by a jury of twelve women on a charge of possession of a hypodermic device used for the same purpose as a hypodermic needle, Dr. J. Walter Clark, local chiropractor, was sentenced to pay a \$50 fine or ten days in jail by City Judge Louis Budway. . . . A complaint against Doctor Clark was filed recently by J. A. Plank of the State Narcotic Division.—*Huntington Park Signal*, April 13, 1929.

According to reports, R. B. Crawford, mentioned in "News Items," April 1929, as charged with violation of the Medical Practice Act in connection with tonsillectomy performed by the electrocoagulation method, on April 20, 1929, pleaded guilty in the Superior Court of San Francisco and was placed on six months' probation.

Charged with violation of the State Medical Practice Act, Delmar J. Frazier, who lists himself as a physical therapist, was arrested in an office building at Twelfth and Washington streets in Oakland yesterday by J. W. Davidson, inspector for the State Medical Board (*San Francisco Examiner*, April 19, 1929). The records show that in Department 1 of the Oakland Police Court, Delmar J. Frazier pleaded guilty on May 14, 1929, and judgment was suspended by the court.

Dr. Florence Goodhall, chiropractor, today was in the county jail, where she awaits sentence to San Quentin for life for second degree murder in connection with the death, through an alleged illegal operation, of Mrs. Zeruah P. Mahan, 2129 Prosser Avenue, Santa Monica. . . . Judge Wood fixed next Friday as time for sentence, remanded Mrs. Goodhall to custody

and exonerated bond. Evidence at the trial showed that Ray F. Mahan, husband of the dead woman, took his wife to the chiropractor and that later Mrs. Mahan died of tetanus, which set in through neglect (*Hollywood News*, April 24, 1929). (Previous entry, "News Items," April 1929.)

Accused of having sold numerous prescriptions in violation of the Harrison Narcotic Act, Dr. E. Harrison will be arraigned this week in the United States District Court. Doctor Harrison is now at liberty on bail for \$3000. It is charged that the defendant issued a number of drug prescriptions in the names of various persons and gave them to one person, said to be a drug addict.—*Los Angeles Times*, April 29, 1929.

The records show that, on May 13, W. F. Hoque, asserted cancer specialist (who has been practicing in San Jose many years) was adjudged guilty of violation of the Medical Practice Act, and sentence is to be imposed on May 17.

According to reports, Joe A. Hobson on May 10 pleaded guilty in a justice court of Victorville, San Bernardino County, to a charge of violation of the Medical Practice Act and was sentenced to pay a fine of \$100, said sentence being suspended for one year on condition that defendant does not violate the Medical Practice Act during that period.

An appeal from the decision by Judge S. E. Crowe, fining Dr. Manuel Machado, Santa Maria chiropractor, \$300 and sixty days in the county jail, will be made immediately. Attorney Fred Shaeffer announced this morning. Doctor Machado was sentenced yesterday for practicing medicine without a license, and a motion for a new trial, made by Attorney Shaeffer, was denied. Judge Crowe set Doctor Machado's bail at \$2000. The defense contended that Doctor Machado should have been tried for a violation of the State Chiropractic Law, and not under the medical statutes (*Santa Maria Times* of April 30, 1929). (Previous entries, "News Items," December 1928; May 1929.) According to reports, Manuel Machado is alleged to have approached two prominent men in Santa Maria, asking them to endorse a note for \$7500, telling them that his attorney, C. A. Chames of Los Angeles, was to deposit the money with the medical board as a guarantee that he would not practice medicine and that on June 21 the board would give him a physician and surgeon's license. We notified the authorities that such a statement was unqualifiedly false, and it is further reported that an attorney by the name of C. A. Chames cannot be located in the city of Los Angeles or elsewhere, nor is he known by the County Bar Association.

Hamilton McClarty, charged under the Diploma Mill Bill (Chapter 79, Statutes 1927), with filing fraudulent diplomas, etc., in an attempt to gain a California medical license, was on May 16, 1929, following his plea of guilty, placed on probation by Superior Judge Lile Jacks, city and county of San Francisco. Special Agent Davidson reported: "It is particularly interesting to note that one of the letters of character recommendation in the McClarty case is signed by Reuben L. McMasters, who owns and operates a drug store in Modesto, California, and who incidentally is mentioned in McClarty's affidavit as having purchased one of the National University of Belgium diplomas." In connection with his petition for probation, Hamilton McClarty filed an affidavit relating that in January 1927, for the sum of \$500 he purchased from Date Alexander, who operated the Kansas City College of Medicine and Surgery, Kansas City, Missouri, the medical diploma of said institution, which diploma was dated in 1921, although purchased in 1927. This is most interesting, since the Kansas City College of Medicine and Surgery had its charter revoked by the State of Missouri June 23, 1926, that is, at least six months before the asserted

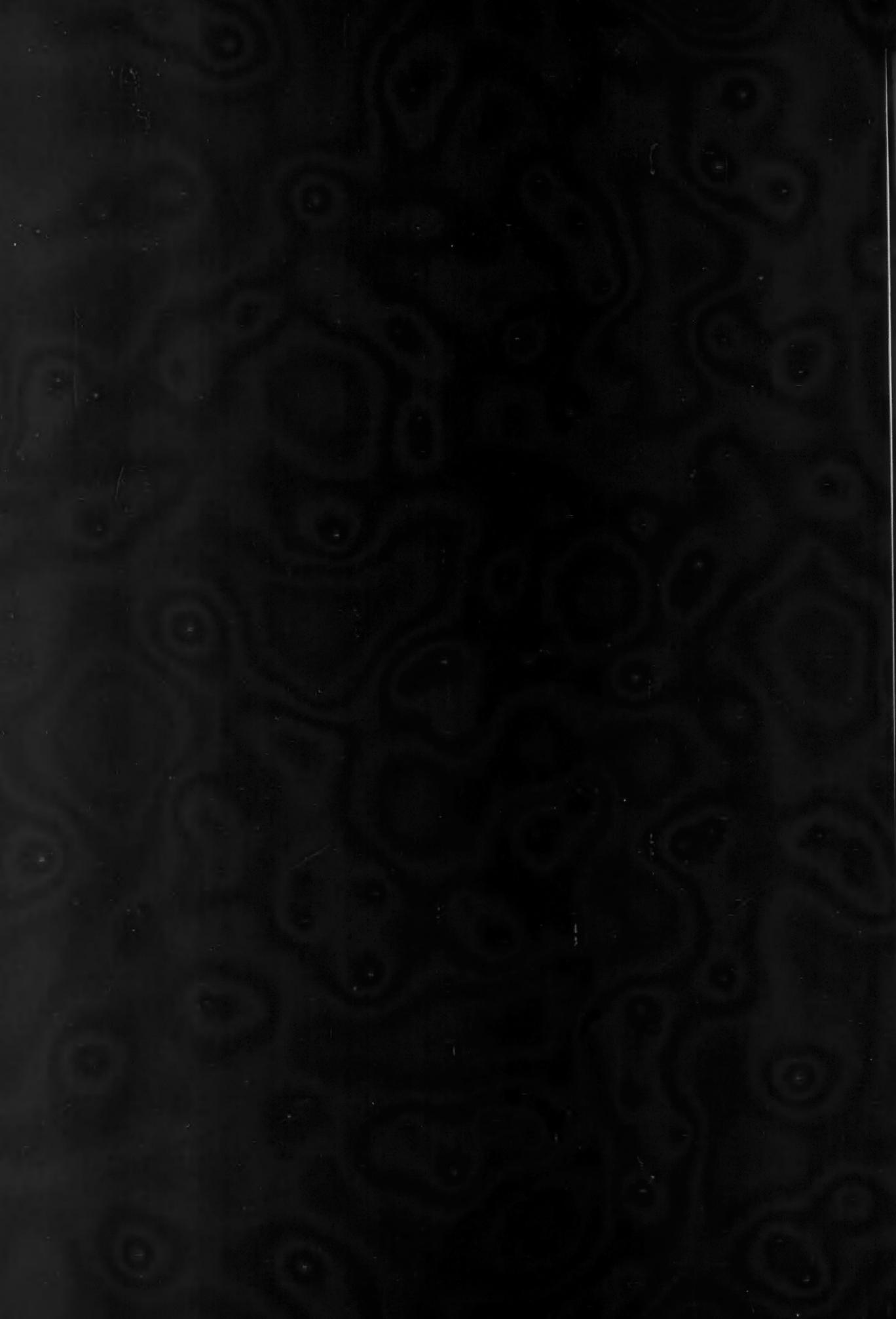
purchase of this diploma. The charter was revoked because the school was involved in the Missouri diploma mill scandal in 1923-1925. A new charter was then obtained under the name of "American Medical University," which opened August 9, 1926, and now occupies the same site as its predecessor and is apparently being conducted by the same interests. But what matters a little question of dates in the purchase and sale of medical diplomas when large remunerative returns are forthcoming? (Previous entry, "News Items," October and December 1928; February 1929.)

"Announcement. Dr. H. Allan Peters of New York City, noted eye specialist and lecturer on 'Perfect Sight Without Glasses,' announces to the general public and to the many people who were unable to gain admittance to his last two lectures, that he will give a series of four free lectures on Sunday, Monday, Tuesday, and Wednesday, April 28, 29, 30, and May 1, at the Woman's City Club, 465 Post Street, at 8 o'clock each evening. Anyone wishing free tests, interview and advice, may make an appointment by calling Doctor Peters at 980 Bush Street" (*San Francisco Call*, April 20, 1929). H. Allan Peters, who, according to his handbills, has just completed a course of four lectures on the mysteries of "Vitalic Breathing, Life Building, and Eyes of Youth" at 465 Post Street, almost disappointed his audience at another gathering May 3. While his auditors were gathering for the lecture, Peters was taking a short cut to the city prison in tow of J. W. Davidson of the State Board of Medical Examiners. He was booked on a charge of violating the Medical Practice Act (*San Francisco Chronicle*, May 4, 1929). The Department of Licenses, State of Washington, reports that H. Allan Peters holds a diploma from the American University of Sanipractic, Seattle, Washington, which institution is alleged to have had its charter revoked for fraud. Said board also reports the revocation of the Washington licenses of all individuals, including Doctor Peters, who were licensed as sanipractors on diplomas from the American University of Sanipractic.

The records show that Katherine Schleef was recently in the court of Police Judge George J. Steiger, Jr., remanded to the probation officer for a period of six months following a hearing on a charge of violation of the Medical Practice Act, during which time should she again violate the terms of the Medical Practice Act, the judge is reported to have announced that she would be sent to the Superior Court for trial.

Dr. M. Alvin Smith, pioneer California physician, was lodged in the city prison here yesterday following arrest in Plymouth, Amador County, on a charge of knowingly depositing poison in the mails. Smith is accused of supplying morphin to a wealthy Los Angeles man, an attorney in Jackson, and others, according to Assistant United States Attorney Albert E. Sheets. . . . Since August 11, 1928, Smith, who has practiced medicine for forty-five years, has purchased 5500 one-half grains of morphin, which Sheets claims he mailed almost daily to wealthy clients in shipments valued at \$3, \$5, and \$10.—*Sacramento Union*, May 1, 1929.

Identification of Physicians' Cars.—At a recent meeting held by a special committee representing the Medical Society of the County of New York and the Police Commissioner, it has been arranged that the New York City police will recognize the special automobile insignia issued by the American Medical Association. Cars bearing this device will not be molested even though standing in restricted parking areas. The county society has issued cards to its members for their further identification in case any trouble should arise. Members driving their own cars should always carry these cards on their persons.—*Medical Journal and Record*, May 1929.





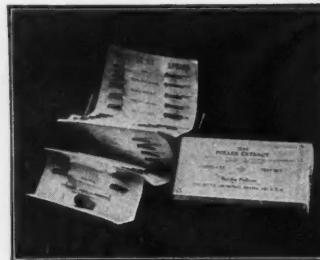
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